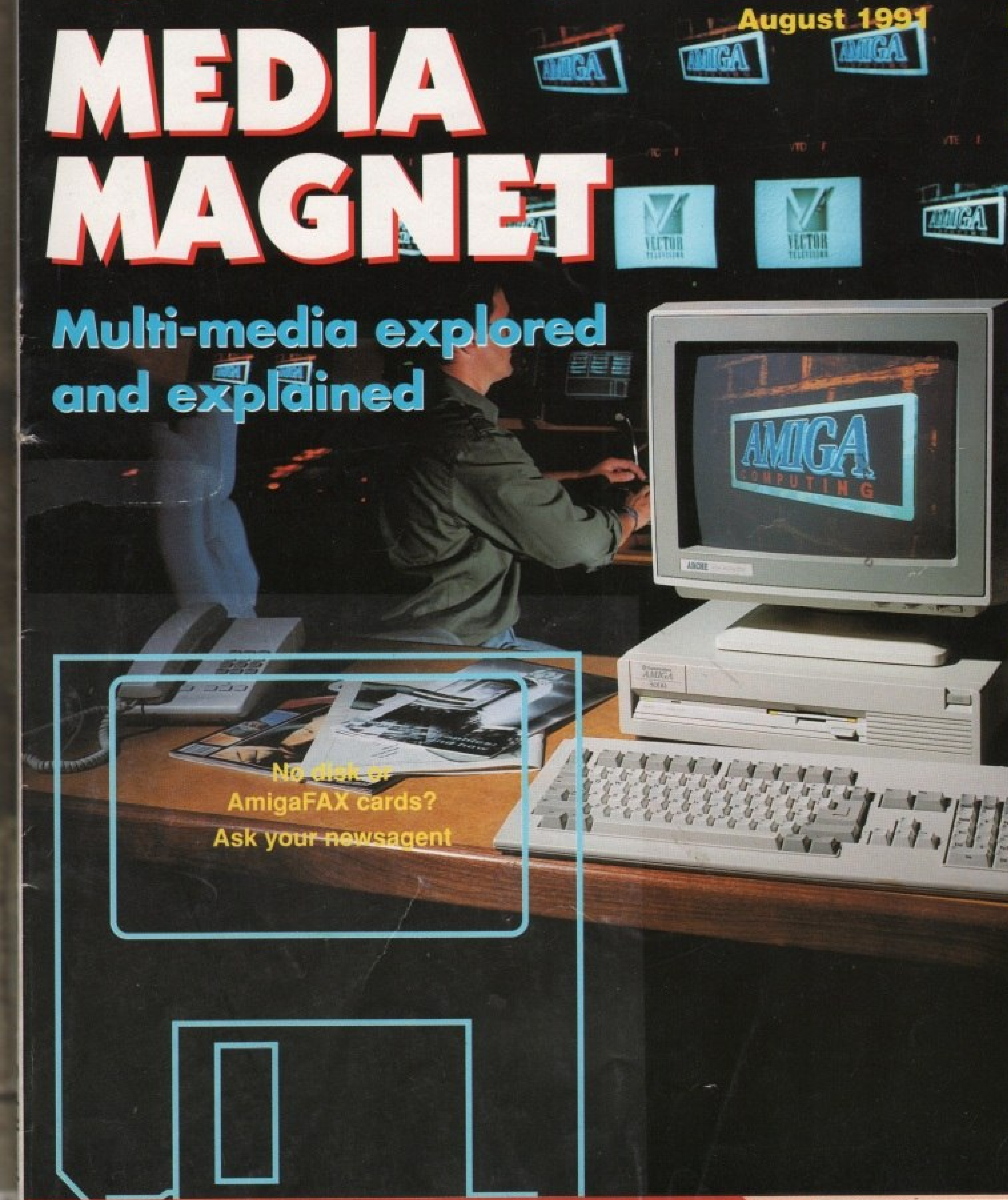
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AMIGA COMPUTING

August 1991 Issue 39 £2.99

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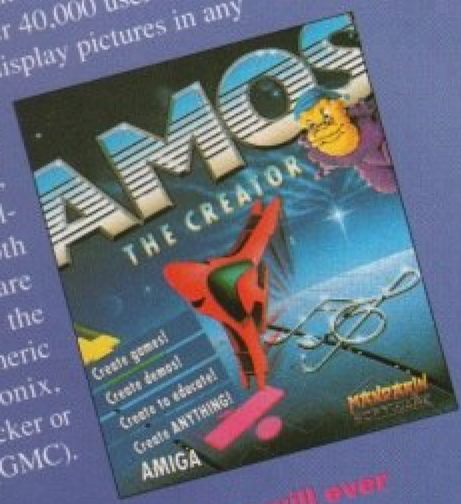
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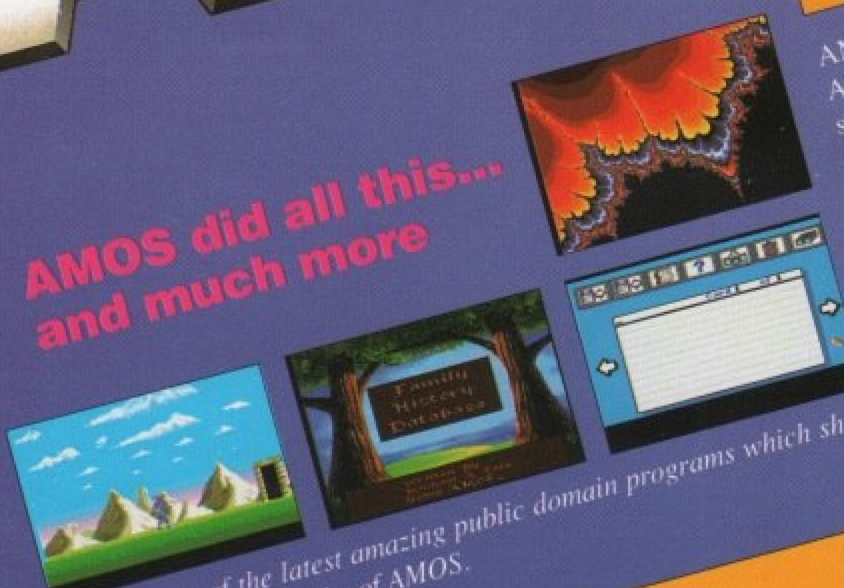
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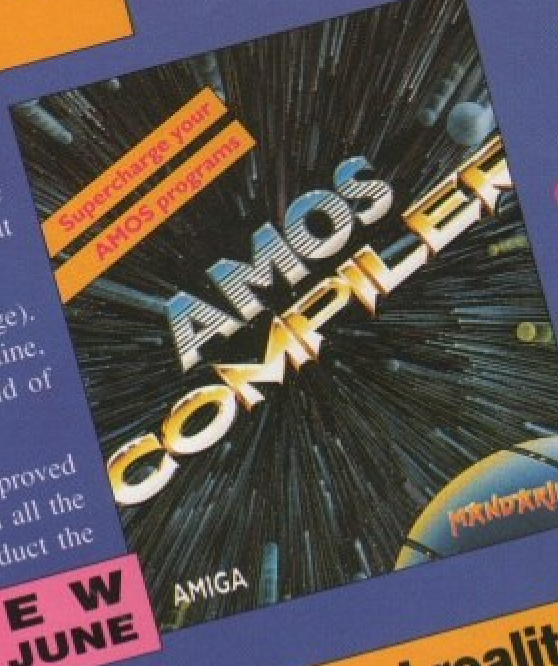
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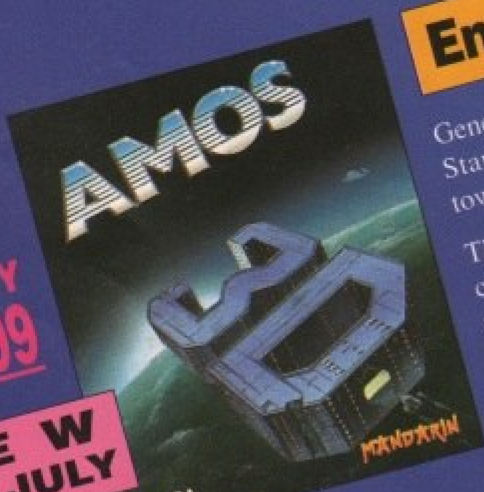
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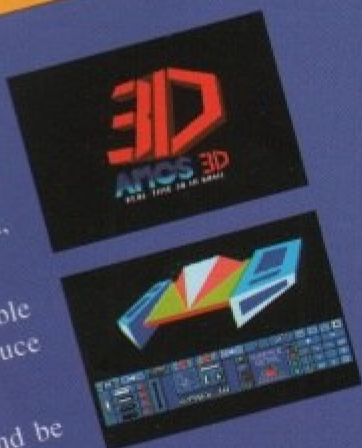
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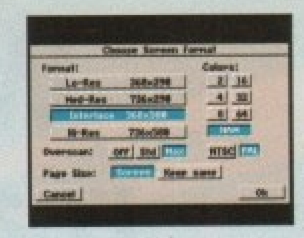
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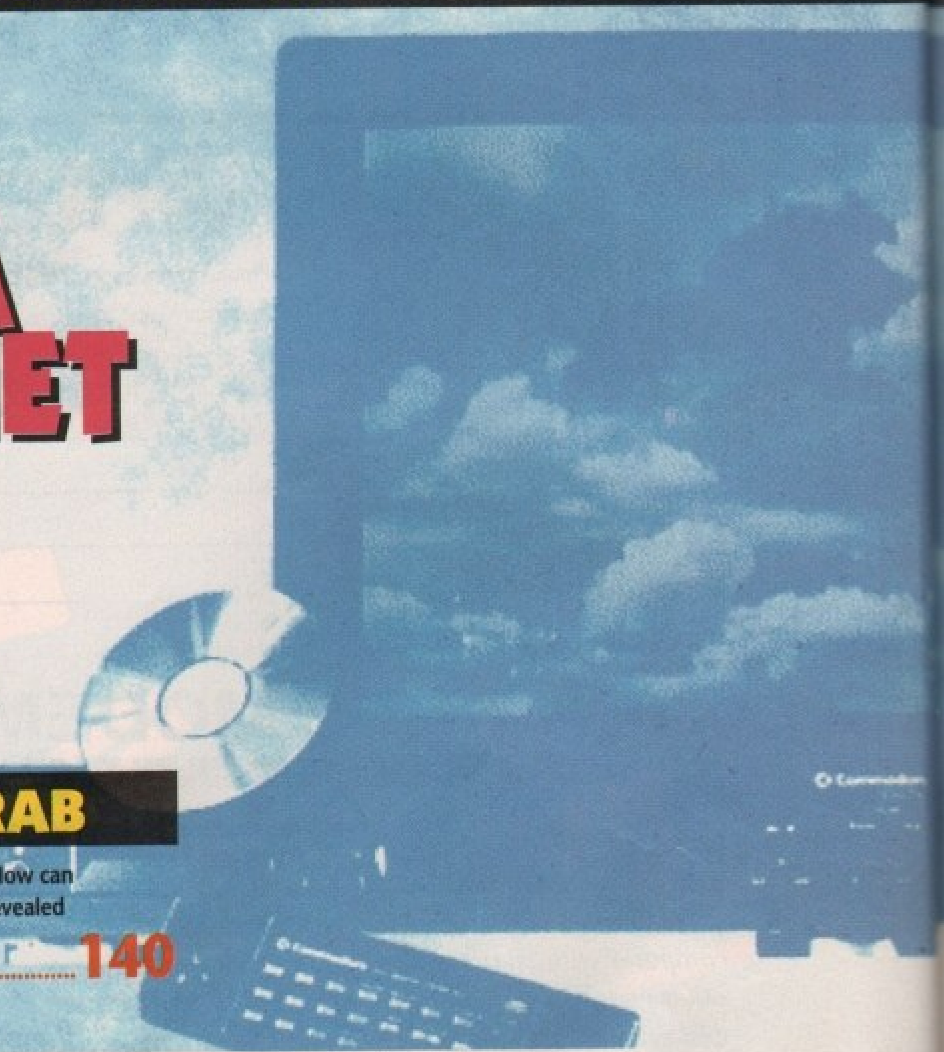
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Amiga Computing welcomes articles for publication. Material should be sent on an Amiga readable disk. The return of material cannot be guaranteed. Contributions can only be accepted by Europress Publications on an all rights basis.

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COVER STORY



MEDIA MAGNET

Is multi-media the next step forward for the Amiga, or just another buzz-word?

GRAND GRAB



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THE COVERDISK

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amiga almanac

Something for everyone, every month, from the Amiga experts

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AMIGA COMPUTING CONTENTS

2 great offers for subscribers – Page 144

REGULARS

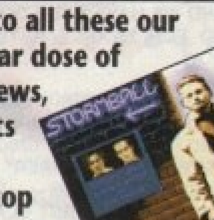
FEATURES

GAME ZONE

The section of *Amiga Computing* that takes having fun seriously!

This month we have the hottest reviews of

• 3D CONSTRUCTION KIT • CRIME DOESN'T PAY
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Add to all these our regular dose of Previews, Cheats and our exclusive Gallup chart of the top selling games and your trigger finger should already be itching 43





Education bundle price slashed as rival firm launches similar pack

By JOHN BUTTERS

AN IMMEDIATE £100 price fall has been announced for Commodore's top selling Class of the 90's First Steps education bundle only weeks after rival firm Atari UK released a similar package.

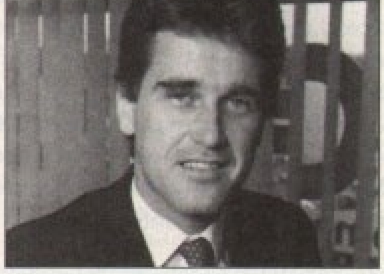
But the Maidenhead-based computer giant was quick to dismiss speculation that its move had any connection with the introduction of Atari's Family Curriculm Pack. They claim that the price drop was simply as a result of good sales, and a policy to pass reductions on to customers at the earliest opportunity.

Spokesman Andrew Ball commented: "Irrespective of whether Atari had or not (released Family Curriculm), once our costs had been recouped, we would have passed reductions on to the end user."

Education sales manager, Peter Talbot, added: "Commodore, as a leading supplier to education, is striving to make computers more affordable and accessible to schools. The First Steps pack represents excellent quality and value for money.

In the £499.99 pack is an A500 fitted with one megabyte of ram and eight software titles including Let's Spell, Deluxe Paint II, Deluxe Print II, a word processor and a multi-media filing system capable of storing sound and graphics.

The pack is aimed at children aged over five and more than 17,000 packs have been bought by UK schools, which are also eligible for preferential prices.


Peter Talbot: "Commodore is striving to make computers more affordable and accessible to schools."

More support for CDTV as sales take off

AS Commodore's CDTV hit the High Street the computer giant has announced that the machine is to be compatible with Kodak's Photo CD system when it is launched next summer. The Kodak system converts conventional photographs into the format of compact disks and CDTV users will be able to view their photographs on television sets. Up to 100 35mm images will be stored on each Photo CD.

Managing Director of Commodore UK, Stephen Franklin, commented: "CDTV is bringing the world of multimedia to consumers and compatibility with Photo CDs will be a vital component in this movement."



Set for launch at the UK's main leisure show is Commodore's CD-ROM. One problem facing A500 owners with hard disks will be that they will have to disconnect the drive before hooking the CD-ROM to the computer

Meanwhile, sales of the new Amiga-based CDTV are said to be doing quite well. Within a couple of weeks of its going on sale Commodore was claiming UK sales in excess of 2,000, its main problem being to ensure the product is available in shops.

A Commodore spokesman told *Amiga Computing* that sales of the £599.99 machine were split between those familiar with the Amiga but wanting to move over to something less complicated and people who would not buy a normal computer.

And the firm is continuing to market the CDTV away from the Amiga. In a recent letter to trade magazine *Computer Trade Weekly*, Commodore's Marketing Manager, Dawn Levack, explained that if the multi-media player was shown to be an Amiga computer with a CD then it would confuse and put off those people who fear computers, or have no interest in them.

She said that while those who understand the market and product think its positioning is strange, it is essential that it is seen, regarded and perceived as something wholly new, different and exciting for both the long term and broad appeal of CDTV.

Staying with compact disks, it has been announced that Commodore's CD-ROM, the A690, is to be launched at this year's European Computer Entertainment Show at Earl's Court at the beginning of September.

The CD-ROM will play CDTV disks and plugs into an A500 expansion port after users have first unplugged hard disk drives or external memory expansion. Owners of other variants of the Amiga will have to wait until next year before they see a drive for their machines.

The A690 will cost £299.

WHAT'S new

The fair travels

BRUCE EVERISS, organiser of the All Formats Computer Fair, has said that his next event will be held in September. During the autumn the fair will visit several regions including Scotland, Leeds, Bristol, the Midlands and London.

Everiss said: "No matter where people live in Britain they are going to be a reasonable drive from a show. There is a lot of support for regional shows – the last show had 70 exhibitors, including all sorts of 'little' people who do not go to big shows."

The organiser of the shows and owner of several computer-related recorded telephone messages has recently moved premises. Bruce Everiss is now at PO Box 71, Bishops Itchington, Leamington Spa, Warwickshire CV33 0XS, telephone 0926 613047.



AT board to run faster

GERMAN hardware specialist Vortex is set to start work on upgrading the Amiga version of its PC emulator, ATonce.

It has had several software upgrades since its release last year but now the developer has decided it is time to change the hardware to increase its performance.

A spokesman for UK distributor Silica Systems (081-309 1111), Andy Leaning, said ATonce Plus "is planned to follow the same path as the (Atari) ST." The speed of the Intel 80286 CPU will be boosted from 8MHz to 16MHz and the board will be on sale in three months.

Industry experts believe the emulator will cost £225, and will lead to a massive price cut for the existing 8MHz ATonce, probably to £149.

Meanwhile Vortex has just finished its 'second generation' A2000 adaptor card which enables an Amiga to be transformed into a fully expandable PC. The £69.95 card is necessary for all A2000 owners planning to use ATonce and allows extra memory and video cards to be accessed by the emulator.

Drawing program on the horizon



AMERICAN publisher of the best selling ProWrite word processor, New Horizons Software Incorporated (010 1 512 328 6650), have bought Central Coast Software, publisher of a wide range of Amiga utility packages.

All Central Coast departments have been relocated to New Horizon's headquarters in Austin, Texas, and their Colorado office closed. Central Coast becomes a division of New Horizons Software.

Among CCS's leading Amiga products are Quarterback, a hard disk backup program, and Quarterback Tools, a set of disk utilities for undeleting files, correcting disk problems and increasing disk performance.

File transfer program, Dos-2-Dos, enables files to go between IBM-compatibles and an Amiga and vice versa. Mac-2-Dos does a similar task but gives a link between Apple Macintosh and Amiga systems.

President of New Horizon, James Bayless, said: "Central Coast Software publishes a superb line of Amiga utility software. As with the New Horizons' products, their products are characterized by powerful features and exceptional ease of use.

"With the addition of their products to our existing line we can provide a wider selection of high quality software to solve the needs of Amiga users."

Amiga Computing can also reveal that the next package to come from the New Horzions stable will be DesignWorks, a structure drawing program which should be available within weeks.

It is described as being the ideal tool for creating any type of detailed drawing, treating graphic elements as independent objects. Designs can be up to 100 inches by 100 inches and all 4,096 Amiga colours can be used.

An unlimited number of drawing layers and a text system that enables any combination of Amiga fonts, sizes and styles are available. Up to 10 drawings can be open simultaneously and the firm claims that, because of its high resolution printing, near PostScript quality results can be obtained from a normal dot matrix printer.

A minimum of 512K memory and Kickstart version 1.2 is sufficient to run the program but New Horizons recommends the use of a second drive. At the time of going to press a UK price had not been finalised although it will sell for $125 in its homeland.

Shortly before its takeover Central Coast Software struck a deal with distributor Silica Systems (081-309 1111) for their entire range of Amiga products to be sold in the UK. This arrangement continues.

AMIGA people

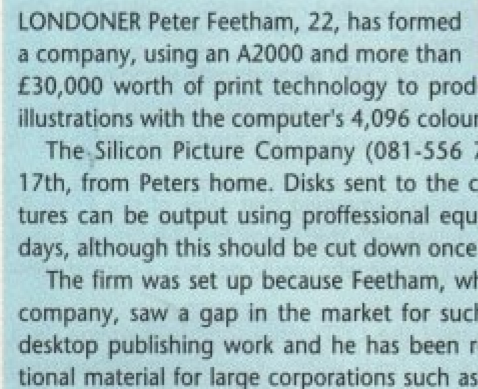
Shirts in up to 4,096 colours

LONDONER Peter Feetham, 22, has formed a company, using an A2000 and more than £30,000 worth of print technology to produce prints, T-shirt and sweatshirt illustrations with the computer's 4,096 colourpalette.

The Silicon Picture Company (081-556 7607) began operations on June 17th, from Peters home. Disks sent to the company with Amiga-created pictures can be output using proffessional equipment and returned within four days, although this should be cut down once things begin to settle down.

The firm was set up because Feetham, who always wanted to run his own company, saw a gap in the market for such a service. His background is in desktop publishing work and he has been responsible for producing promotional material for large corporations such as British Telecom and Shell, which will be beneficial when he starts to sell his own designs.

The skills of PD author Tobias Rickter are being employed at the Silicon Picture Company and Feetham is already hoping that he will be able to take on somebody else before too long.



Amiga artists can now output their work without having to own expensive printing equipment

He charges £5.50 for A4-sized prints, A3 prints cost £6.50 and larger ones range from £10. T-shirt costs are £16.95 and sweatshirts, £19.95, although discounts are available for bulk orders.

Videoing with the Amiga

THREE new desktop video products for the Amiga have been announced by Syntronix Systems (0332 298422).

Editman is a computer-based editing system capable of controlling certain domestic VCRs and camcorders with an accuracy of plus or minus one frame. Auto assembly, insert and audio dub editing is available from mouse-driven icon screens.

IFF files can be edited with or without genlock support, accuracy being achieved without timecode. Cost £587.45.

Users of S-VHS or Hi8 equipment can record animation or computer-generated images without the fuzzy edges to colours found when using the composite PAL signal, with the use of the RGB to S (Y/C) Recording Interface. Using the equipment makes genlocks an alternative that can be avoided. A YUV version is also available for those using professional component systems. Price, £293.70.

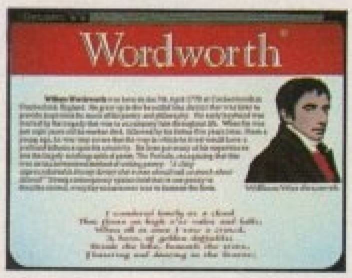
Professional Computer RGB Spliter accepts S (Y/C) signals and provides host software with respective RGB signals to get video sourced image grabs into the Amiga. Cost, £234.95.

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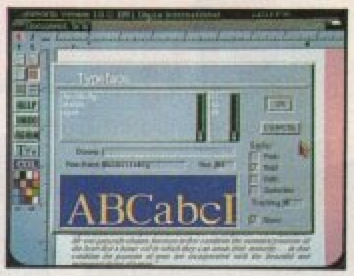
Commands are grouped under a series of pull-down menus, accessible either by the mouse or keyboard. Frequently used commands have on-screen icons, including Help, should you need it.



Experience the look and feel of the new and exciting WB2 (even if you use WB1.3).

Digita's® innovative *Human Interface Protocol*™ is incorporated and sets new standards in speed, style and elegance. Each document is a separate multi-tasking window, which means you could for example, print one while editing another.

Graphics have always been the Amiga's strong point. Now it's better than ever. Pictures from Deluxe Paint can be placed in a document, and then sized, scaled and dragged (text automatically reformats around the image).

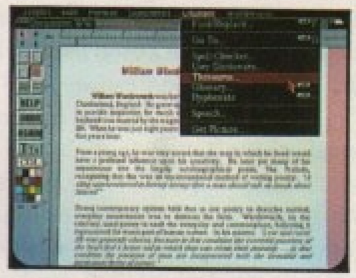


Wordworth's enhanced fonts will give you the very best printed quality. You can also print special symbols, such as boxes, arrows and so on. Better still, you can mix graphics, Wordworth's enhanced fonts, Amiga fonts, Colorfonts and your printer's own fonts, all on the same page.

Wordworth integrates with most word processors, and so you'll be able to use any documents created with Kindwords, Wordperfect, Prowrite, Protext, Excellence, and any ASCII or IFF Text document.

As Amiga Computing put it, "the only Amiga word processor to rival Protext for speed. I would recommend the program to anyone thinking of buying their first word processor or upgrading from Kindwords."

Wordworth is written in the UK by Digita. Which means you'll be using an English Collins spelling checker and thesaurus, and you'll know where to come for professional support.

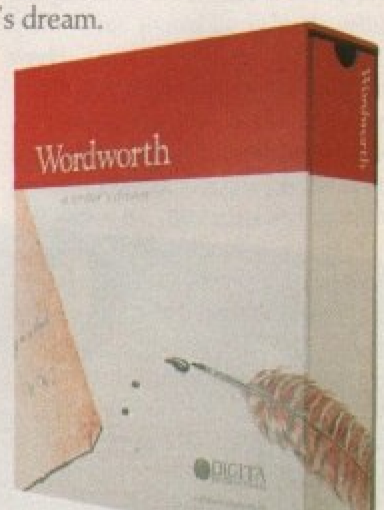


When Amiga Format said "a new word processor that will give the rest of the world a run for its money" they weren't joking. "Wordworth is the most user-friendly word publisher on the Amiga." Praise indeed.

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WHAT'S new

Show promises plenty for AmigaSHOW organiser

Westminster Exhibitions (081-549 3444) has announced details of interesting Amiga products expected to be displayed at the 4th International 16-Bit Computer Show, to be held at the Novotel, Hammersmith from July 12 to 14.

The 160 exhibitors at the show will be displaying the latest software and hardware in the leisure and business market, with several companies expected from North America and mainland Europe ready to launch products in the UK.

Tornado flight simulator ProFlight will be demonstrated on the HiSoft stand. It has recently been converted from the Atari ST and is the most realistic Amiga flight simulator.

But the Bedfordshire-based software house are best known for their professional programming packages and a new easy-to-learn Pascal system will be unveiled at the Novotel. The firm's C Interpreter should also be available in time for the exhibition.

From Precision Software there will be Superbase Professional 4, a database package with graphical applications that support sound samples and pictures.

Pen Pal, Precision's wordprocessor, can open up to four documents at once and has cut and paste and spelling checker facilities.

Surface UK will have several new products from American Supra Corporation including the firm's new range of modems and SupraRAM 2000.

Other new products will be shown by Microdeal, educational software from LCL and the new RX-500 one to eight megabyte ram expansion for the A500 will be available from WTS Electronics. There will also be an opportunity for visitors to meet the editorial staff of Britain's Brightest Amiga Magazine at the Europress Publications stand, who will be happy to hear your comments about the magazine

Domark makes its mark in the USA

GAMES giant Domark Software have formed an American subsidiary and announced a line-up of CDTV products for users on the other side of the Pond.

Domark USA (010 1 415 656 4374) will be headed by Randy Broweleit, a person who has gained previous experience in the US market with software houses SSI and Tengen.

"Domark have some great products that will do well in the States. I aim to build their brand over the next few months and that means a strong commitment to marketing," he commented.

The first products to hit the American market will be 3D Construction Kit, 'Nam and MiG-29 Fulcrum. But the States is also set to see three releases for the CDTV. The first, Trivial Pursuit, is to be closely followed by whodunnit crime busters Herewith the Clues and Murder off Miami.

Going for a better scroll

SCROLLING package, the Big Alternative Scroller, has had two major changes to improve its use.

The scrolling has been improved to get rid of flicker and specialist training days are being offered to customers to use all the facilities that are up and running at Alternative Image (0533 440041), such as 3D Modelling incorporating full 24-bit graphic output, video graphics and DTP.

Users can upgrade from version 1 to version 1.03 by sending their original disk with a cheque for £3.50 to cover administration costs.

A programming guide

PROGRAMMERS wanting to advance from writing Basic demos can graduate to C and Intuition after reading a new book, *Intuition – A Practical Amiga Programmer's Guide* from Kuma Computers (0734 844335). It is the first in a series of Amiga programming books planned by the firm. Author Mike Nelson has given many examples of the Amiga's Graphical User Interface, believing that the best way to start learning to program is by looking at modifying other people's code.

Programs can either be typed into the computer or obtained on separate disks. The explanations of the code in the book are detailed and, in places, repetitive to reinforce some of the more unusual concepts.

The book has a strong emphasis on practical programming and costs £16.95 and the disk version of the listings contained in the book costs £10.

Colour upgrade

PHOTON PAINT users are being given the chance to upgrade to Oxxi's (010 1 213 427 1227) new 4,096 colour paint program, Aegis SpectraColor.

Oxxi president John Houston told *Amiga Computing*: "All Photon Paint owners benefit from SpectraColor's additional features, but for a very affordable price.

"SpectraColor is the first HAM paint program ever released for the Amiga to support full DeluxePaint-style Brush Animation and Key Frame Animation."

Owners of the earlier product should send the original main program disk or a photocopy of their manual, together with $64.95 to the firm at 1339 E. 28th Street, Long Beach, CA 90039, USA

Do you know something we don't?

Although *Amiga Computing* has scores of contacts in the Amiga world, we also need you. If you have some hot news pick up the phone and ring John Butters on the newsdesk now on 0625 878888.

All information supplied will be treated in the strictest of confidence and if it's really good your wallet will be heavier.

Top printer at under £300



Making quality 24-pin printing more accessible to Amiga owners is Fujitsu's new DL900

AMIGA beginners are being targetted by Fujitsu Europe (081-573 4444) for a new entry-level 24-pin printer costing less than £300.

The desktop DL900 has 110-column printing at 10 characters per inch and seven resident fonts including Courier, Boldface, Prestige Elite, Compression and Corresondence. It boasts a print speed of 180 characters per second in draft mode and 60cps in letter quality fonts.

It has three emulations, Fujitsu DPL24C Plus, IBM and Epson and while the price is promised to be under £300, an exact figure has yet to be decided.

Meanwhile rumours suggest that a low cost 9-pin printer is to be available soon from Amiga distributor Silica Systems (081-309 1111).

Details of the machine remain sketchy but sources close to the firm have revealed that it will boast a print speed of 162 characters per second in draft mode, yet will be priced low.

It is thought Citizen might be the mystery manufacturer of the printer.

WHAT'S new

Fine tuning for pianists

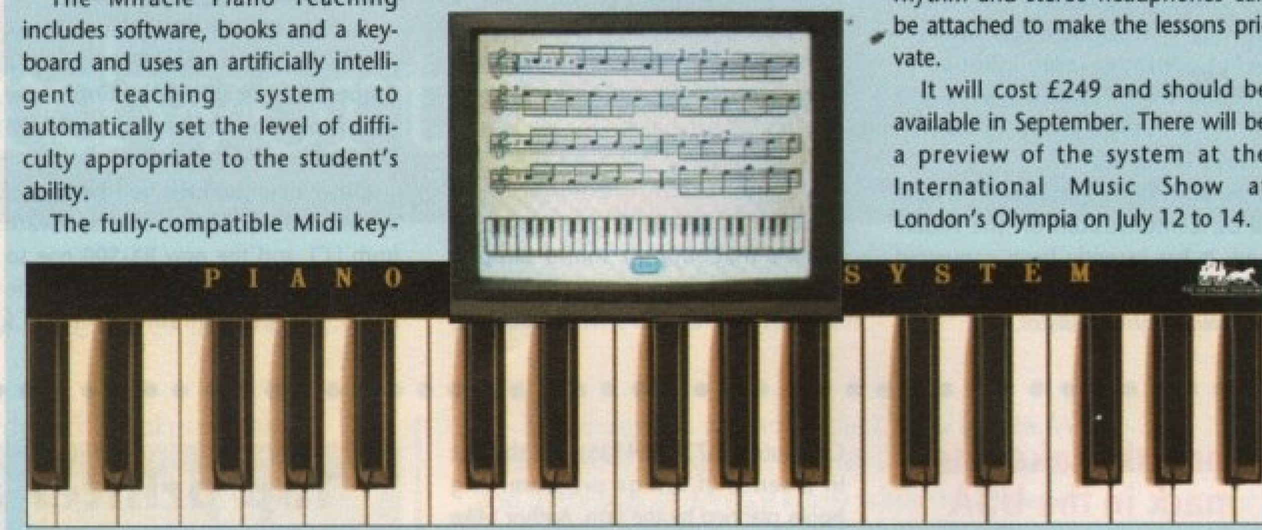
LEARNING to play the piano will become much easier with the introduction of a learning program from MindScape (0444 831545).

The Miracle Piano Teaching includes software, books and a keyboard and uses an artificially intelligent teaching system to automatically set the level of difficulty appropriate to the student's ability.

The fully-compatible Midi keyboard has built-in speakers and can operate as stand-alone. There are 360 lessons which company spokesman Simon Harvey claims will "take you from learning the position of Middle C to Beethoven".

A series of games aid in the teaching of keyboard recognition and rhythm and stereo headphones can be attached to make the lessons private.

It will cost £249 and should be available in September. There will be a preview of the system at the International Music Show at London's Olympia on July 12 to 14.



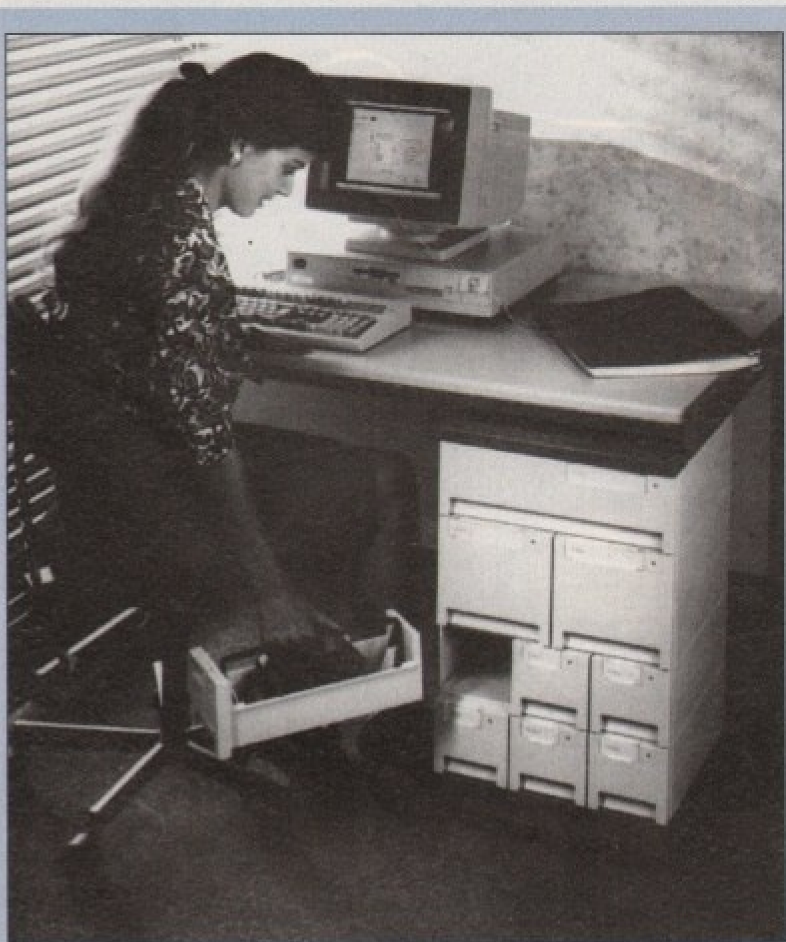
Lasers added to printer range

PRINTER manufacturer Kyocera Electronics (0734 311500) has added two new laser printers to its range and cut the price of others.

Hitting the market are the F-5000, a single bin printer which can print on either A3 or A4 paper priced at £5,350 and the £1,995 F-820, a dual-bin laser turning out eight pages per minute.

Kyocera models seeing a price reduction of about £500 are the 10 page per minute F-2220S to £2,920, the 18 page per minute F-1800 to £2,920 and the F-3300, £3,650.

Marketing communications manager Neville Rawlings says: "We naturally view our price reducations as a positive move towards gaining ground in a highly contested market."



Disk storage to be tidier

DISK storage is a problem facing many Amiga users. Floppies either lie scattered across desks or in disk boxes piled high, making access to the game in the bottom box a tedious task.

But things are set to change thanks to a new storage system from Kent firm Accodata (0732 885555). Disk File is made up of stacking boxes which slot together and can be built into a shape and size that suit the user.

Each has a carry handle to enable the box to be transported. An optional extra is a bracket system which will connect the Disk File under a desk surface as a drawer.

A 300-disk file costs £60.

Silica goes on air

LEADING Amiga distributor Silica Systems (081-309 1111) is believed to have become the first computer dealer to use radio for an advertising campaign. Over the bank holiday weekend May 24 to 27 the firm used London radio stations Capital Radio and Capital Gold to promote their 'Mad Spring Sale' and kept their Sidcup offices open to accept enquiries and orders.

Silica spokesman Andy Leaning says that they were the ideal stations because the audience, of up to 3,000,000, is made up of typical Amiga buyers.

"The market place we wanted to address was not represented by other media, such as those that wouldn't normally read the computer press," he commented. "You can never tell the response from radio immediately, but people see you as a more respectable company."

Leaning refused to comment on the cost of the promotion.

Animation at city festival

EDINBURGH-based Amiga Centre Scotland (031-557 4242) will be holding the 1991 Computer Animation Competition and Exhibition to coincide with the city's annual festival.

Last year a similar event was organised and because of its success and a growing interest in computer animation the firm is once again hoping to attract a high standard of original work from Amiga users.

There will be prizes of both hardware and software for the winners and work will be exhibited at the company during the 1991 Edinburgh Festival, to be held on August 21 to 28.

Entries shoudl be submitted on either floppy disk or PAL video tape and should be accompanied by an official entry form which is available from the firm. The closing date for entries is July 31, 1991.

Communication from the States

AMONG several additions to Supra Corporation's family of modems is an internal model for the A2000 and A3000.

SupraModem 2400 Plus has MNP 2 to 5 and CCITT v42bis error correction, to give up to 9,600 bits per second throughput when communicating with other v42bis modems and 4,800bps with MNP 5 modems.

Hayes compatible, it is an autoanswer and autodial modem supporting v21, v22 and v22bis protocols. Included with the pack is A-Talk III comms software and it sells for £169.95. An external version of the same modem is available without software for £199.95.

Lower down the range is the SupraModem 2400 MNP, which has the same specifications apart from the absence of v42bis error correction. Costing £179.95, it will, before too long, be upgradable to the same standard as SupraModem 2400 Plus for about £30.

A more specialist modem in the range is SupraModem 9600 Plus, available only as an external modem and again offering MNP 2 to 5. Selling for £549 this v32 model gives v42bis up to 19,200bps.

All the models are available with a five-year warranty and registration by Surface UK (081-566 6677). Albany-based Supra can be contacted on 010 1 503 967 9075.

Whoops!

Amiga Computing would like to apologise to Castle Software and its customers for printing incorrect pricing information in an advertisement in the July issue.

Introducing Saxon Publisher & Draw 4D to the UK...

Saxon Publisher provides you with performance unparalleled by other DTP programs, with features so powerful and flexible that even the most complex documents can be created in a fraction of the time. A program that incorporates numerous advanced typesetting features not available anywhere else - at any price. Saxon Publisher will change your perceptions about what a truly professional DTP program should be...

SKEWING

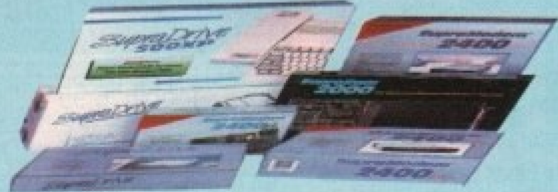
The DTP Standard for the Amiga

- Text sizes up to 2000 points
- Import text from any Amiga WP
- Rotate, Scale and Skew text in any direction
- The ability to import and print 24 bit images without convertions utilities
- Support for Encapsulated PostScript

ROTATION

Draw 4D is the first Multi Dimensional Structured Drawing and animation software for Desktop Publishing and Video. The interface is the fastest, smoothest and easiest to use available on any computer.

- Zoom range is nearly unlimited
- DRAW 4D is fully multitasking



PICTURE DISTORTION

Saxon Publisher V1.2....£249.95
Draw 4D....£149.95
Saxon Publisher/Draw 4D Package...£349.95

...and the New Supra Range

SupraDrive™ Floppy quiet reliable floppy disk drive works with all Amiga® computers. 1MB unformatted capacity. Pass-through port for connecting additional drives...£89.95.

SupraDrive™ Removable Syquest™ removable cartridge drive for the A500 or 2000. Great for primary & back-up storage.Comes complete with SCSI interface, or as add-on drive. INTERNAL £599.00 EXTERNAL £599.00

SupraDrive™ 500XP Micro-power hard drive, SCSI interface, & RAM for the A500. Easily expands for 1/2 to 8MB RAM. Includes Amiga bus pass-through, SCSI port, software. From £425.00

SupraDrive™ WordSync™ Easy-to-install, autobooting hard disk card for the Amiga 2000. Uses high-performance Quantum™ hard disk & includes SCSI port, utility software. 40MB £425 · 52MB £475 · 105MB £625

SupraRAM™ 500RX 1/2, 1, 2, 4 or 8MB of FAST RAM for the Amiga 500. Easy to expand. Zero wait states & hidden refresh. Amiga bus pass-through. from £129.95

SupraRAM™ 2000 2, 4, 6 & 8MB of FAST RAM for the A2000 & 3000. Easy to expand. Zero wait states & hidden refresh. Four-layer board improves reliability. From £119.00



SupraModem™ 2400 100% Hayes™ - compatible 300, 1200, 2400 baud modem for virtually all computers. Compatible with all popular telecommunications software. £149.95

SupraModem™ 2400 Plus SupraModem 2400 with MNP5 & V.42bis error correction & data compression protocols. Allows transmissions up to 9600 bps. £199.95

SupraModem™ 2400zi Internal half-card modem for the Amiga 2000 & 3000. Installs easily in any Amiga bus slot. Supports multiple modems on one computer. From £119.95

All modems have a five year GUARANTEE

Supra Corporation

All prices include 17.5% VAT.

Dealer enquiries welcome

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TELEPHONE 081-566 6677 EXT 204/205 FAX 081-566 6678

WHAT'S new

Protar heads for Amiga

BERLIN-based hard disk manufacturer Protar Elektronik (0923 54133) have just opened their first UK office and company boss Mark Dowling has told *Amiga Computing* that they are set to produce their first series of A500 hard drives.

The A500 HD will have storage capacity ranging between 20 and 200 megabytes and will connect to the computer by the expansion bus. There are 10 drives in the range, with the 200 megabyte version being built to order.

Every drive has a data transfer rate in excess of one megabyte per second, with an optional disk cache which can accelerate data transfer time by up to 50 per cent. This is five times faster than the Commodore drives.

Another optional extra with the disks is a SIMM memory expansion for up to eight megabytes of ram. The drives, to be shown at the 4th International 16 bit Computer Show, are expected to be on sale during mid-August at a price starting at about £295 for the 20 megabyte version.



Also coming from the company in August is a colour monitor based on the Philips CM8833.

The C141M comes is supplied with cables to connect it to either an Amiga or Atari ST and although the price is still be be fixed is promised to be competitive. Protar also manufactures an Amiga 512K memory expansion card. This sells for £30 and is on sale immediately. The company is taking orders for the other products.

The office is at Park House, Greenhill Crescent, Watford Business Park, Watford WD1 8QU.ends.

Amiga to help future dentists

STUDENTS at a leading London dental college are set to start using an Amiga to aid them in their studies.

Kings College Dental Hospital are to use an A3000 from next term to teach undergraduates about root canal therapy. The students' tutorial will be made up of a combination of text, scanned pictures and X-ray films, together with Amiga-generated animation, diagrams and sound.

Behind the system are Peta Smith, head of the department of Paediatric Dentistry and Andrew Gould, a general dental practioner with an interest in the application of computer and video technology to dentistry.

Both beleive that Endodonticss for the Deciduous Dentition will form a valuable accompaniment to conventional lecturers, seminars and demonstrations and once other subjects have been added they see it as an ibndispensible teaching aid.

The machine at the heart of the operation is an A3000 with five megabytes of ram connected to a 40 megabyte hard disk drive and two Sharp scanners for image capture. Audio sampling is done with Audio Engineer.

The tutorial was made using Innocatronics' CanDo, Deluxe Paint III and ASDG's, the Art Department.



Easy route to second upgrade



A500 OWNERS with an internal 512K memory upgrade who find they need even more memory are being offered a device which will double the computer's memory from one to two megabytes, without having to dispose of their existing upgrade.

Megaboard has one megabyte on-board and fits between the A500 and the current upgrade, working with all four-chip memory upgrades that do not exceed 90 millimetres in length. No soldering is required and full fitting details are included with the pack.

Boards with higher memory are expected to follow shortly from Worcester-based Evesham Micros (0386 765500). The two megabyte Megaboard is available now and costs £64.95.

DIARY DATES

12 to 14 July 1991
International Music Show
Organiser: Westland Associates (071-730 7852) Venue: Olympia, London A musician's paradise - instruments, synthesizers and celebrity visits.

12 to 14 July 1991
4th International 16-bit Computer Show
*Organiser: Westminster Exhibitions (081-549 3444) Venue: Novotel Hotel, Hammersmith*Scores of exhibitors from Europe and North America meet under one roof.

5 to 8 September 1991
Computer Entertainment Show
Organiser: EMAP (071-404 4844) Venue: Earl's Court 2 If you're interested in games then a visit to Earl's Court is a must.

5 to 8 December 1991
Computer Shopper Show
Organiser: Blenheim Pel (081-868 4466) Venue: Wembley Exhibition Halls An opportunity to buy some bargains before Christmas. It's expected to be much larger than last year's show.

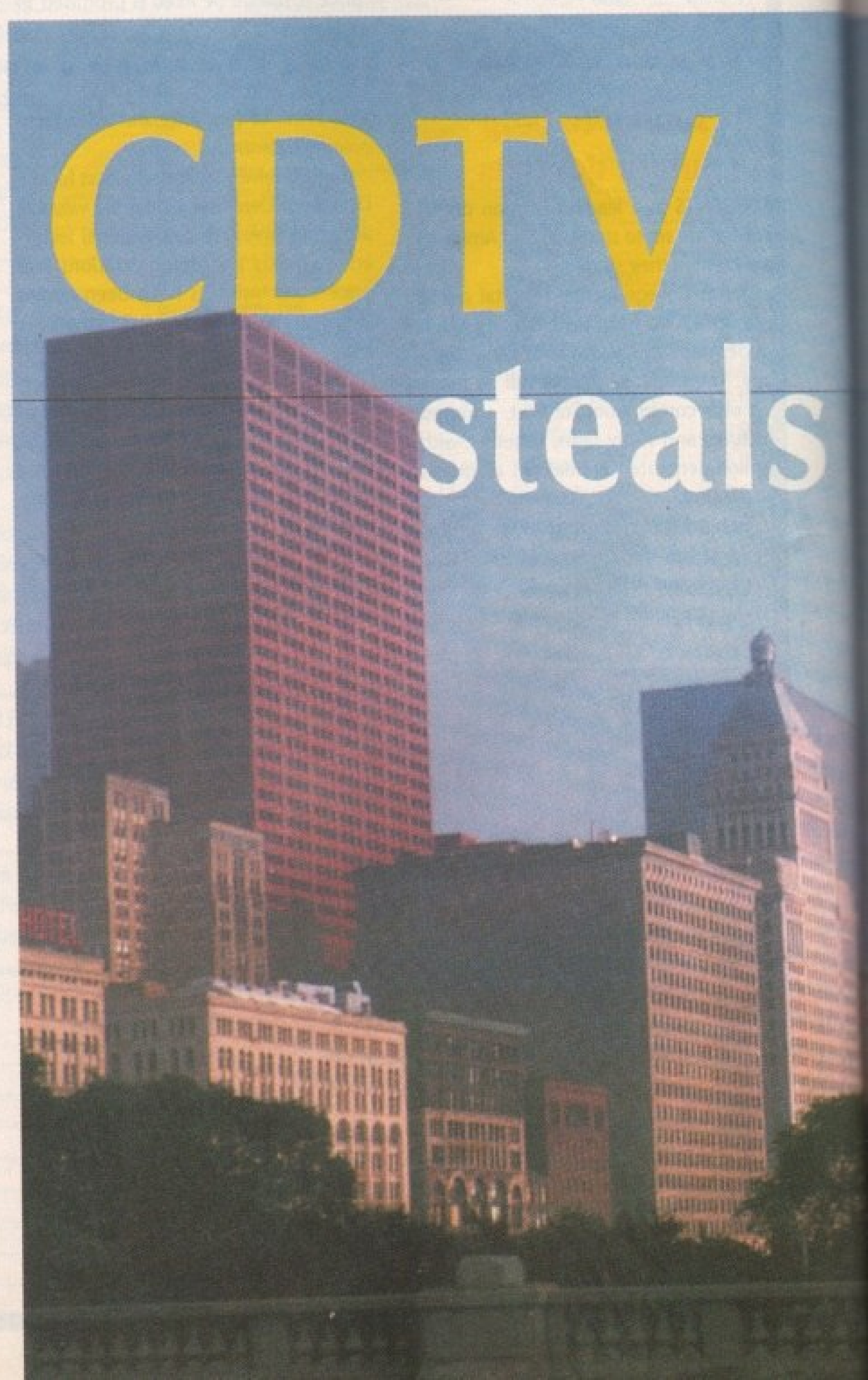
7 to 9 February 1992
5th International 16-bit Computer Show
Organiser: Westminster Exhibitions (081-549 3444) Venue: Novotel, Hammersmith The first post-Christmas Amiga show.

● If you are organising a show relevant to the Amiga and it is not listed above, please let us know so that we can include it in Diary Dates.

WHAT'S new USA



CDTV steals



The big news this month comes from the summer Consumer Electronics Show (CES), held in Chicago, Illinois from June 1 to 4.

If you're looking for the latest and greatest developments in video, hi-fi audio, home entertainment and computer and videogames, CES is the place to be.

This twice-yearly exposition is where dealers and the press go to find out what high-tech items are going to be hot during the next Christmas season.

I went to the show expecting the popular technologies to be things like High Definition Television (HDTV) and expensive yuppie toys such as hand-held electronic Rolodex directories. I was in for a shock – it turned out that the most-talked-about technology on display was Commodore's own CDTV unit.

Commodore had a huge booth strategically placed right in the middle of the East Hall, with the consumer electronics exhibits, rather than in the North Hall with the computer and videogame exhibits.

While the crowd at CES was a bit thin this year, probably due to the recessionary economy here in the U.S., Commodore's booth was consistently crowded. The booth was almost entirely devoted to CDTV, with both currently-available and future applications on display. There were a few Amiga 500 units on display, but CDTV was the obvious star of the show. The player and two of its titles (Music Maker and World Vista) were named among the most innovative consumer electronics products of 1991 by the Electronics Industries Association at CES.

CDTV wasn't the only compact-disc technology on display. North American Philips/Magnavox were once again showing their long-delayed CD-I (Compact Disc-Interactive) player, this time promising that it would ship in October.

Similar in concept to CDTV, the CD-I player has been shown, but not shipped, since the late 1980s. The player has a few advantages over CDTV: it sports a 16-million-color palette, a slightly faster processor, and, most important, has the marketing muscle of Magnavox, Sony, and Matsushita (Panasonic) behind it.

However, it has its share of disadvantages as well: it's much more costly to develop software for than CDTV, it's more expensive ($1400 compared to CDTV's $999), and its fragile "thumb-stick" controller is less familiar to American kids than the Nintendo-like joypad used by CDTV (and more likely to be accidentally broken).

While most of the CD-I software on show looked more polished than the CDTV applications, you have to remember that developers have had years to develop them, thanks to CD-I's many delays.

Compression

The consensus amongst showgoers was that Philips was only shipping CD-I now because of CDTV's presence in the market. One of CD-I's most-touted features, MPEG (Motion Picture Expert Group) compression, which will allow full-screen, full-motion video, isn't ready yet, and won't ship until 1992.

Philips will start shipping the machines in October and make MPEG capability available on a plug-in cartridge sometime in 1992. Company representatives had no information about price and availability of the cartridge.

While Philips were making promises about CD-I, Commodore were showing the already-shipping CDTV, along with almost 30 applications that are currently available, and another 20 that will be available soon. They also showed a number of new add-ons that will help give CDTV a technological boost to help it stay competitive with CD-I.

On the first day of the show, Commodore premiered CDTV playing Kodak's new Photo CD discs. With Photo CD, you take pictures using conventional 35mm film. When you take the film in for processing, each picture is scanned into a computer and stored on a compact disc, in both video-resolution, for display on a television set, and a higher-resolution format, suitable for use in image-processing software.

You'll be able to take Photo CDs home and display the pictures on a TV using CDTV, CD-I, or a dedicated Photo CD player. Up to 100 images can be stored on each disc. Conventional prints can be made using the data stored on CD. Kodak expects Photo CD processing to be available in the U.S. in June, 1992.

Even more exciting than Photo CD, though, was the technology that Commodore was using to adapt CDTV as a Photo CD player. CDTV's standard 4096-color graphics aren't good enough for Photo CD, which requires a 24-bit "full-color" palette. While Commodore engineers would only admit that "some kind of 24-bit solution was in the works," a little poking around behind the machine displaying the Photo CD pictures revealed a unit in the video slot marked "DCTV by Digital Creations."

Currently available only for NTSC machines, DCTV is a $495 external box that adds full-color video output and a digitizer to any Amiga. The unit installed in the CDTV was a smaller,

internal board sans digitizer. The output of the DCTV-equipped CDTV was absolutely stunning – television quality video with none of the fringing or blockiness associated with HAM pictures.

Most exciting, though, was the price – a Commodore representative estimated that the DCTV add-in would cost only about $50. Other showgoers were told that Commodore is negotiating with Digital to make the DCTV output a standard feature in CDTV before the Christmas season. I only hope they change the name – "CDTV-DCTV" is quite a mouthful.

Motion video

Other new technologies shown to the public for the first time were CDXL motion video and the CDTV-PIP picture-in-picture add-on. CDXL is a patented software technology developed by Carl Sassenrath that allows developers to add 12 frame per second, 1/3 screen motion video to their titles.

CDXL is a bridge technology that will allow motion video to be added to CDTV titles while Commodore waits for MPEG compression. Like Philips, Commodore plans an MPEG full-motion-video add-on once the standard is finalized. When combined with the DCTV full-color add-on, CDXL animation looks as good as videotape output.

CDTV-PIP is a special genlock that allows allows a 1/3 screen window containing live NTSC video to be displayed simultaneously with a CDTV application.

With this plug-in video card, you can watch video output from a VCR or laserdisc player while using your favorite CDTV application. Perfect for letting Dad keep track of his football game while the kids play games on the CDTV. Reps at CES weren't sure when a PAL version would be available.

Third-party add-ons for CDTV were on display as well. The AirMouse remote control, which resembles a Star Trek: The Next Generation hand phaser, is a hand-held infrared mouse that works somewhat like a light pen. Instead of rolling it across a flat surface, you move it up, down, left, and right while pointing it at the screen.

This $99 add-on will work at up to 5 metres from the CDTV screen. Another neat gadget was a version of Very Vivid's Mandala system tailored for CDTV. Mandala, which has been around since the Amiga's birth, uses a video camera to allow you interact directly with objects onscreen.

The camera displays a digitized outline of your body, with which you can "touch" onscreen objects. Sample applications on display included a drum set, a paint program that could be manipulated by waving your arms, and an ice-hockey game that lets your image act as goalie.

Software continues to pour out for CDTV. The most impressive title on display won't be available for about another year: Psygnosis' incredible new 3-D flight simulator that features a real-time-generated fractal landscape. If you want a preview, a demo is included on the same disc as the CDTV version of Lemmings, which should be shipping about the time you read this.

Another dazzling title, which should be available in July, is Sherlock Holmes: Consulting Detective, from ICOM simulations. The game's conversational sequences use 15 frame-per-second animated video, featuring 25 actors in 50 speaking parts, authentic costumes, and 25 Victorian-era sets, making this game a truly cinematic experience.

Jack Nicklaus Golf-CDTV features over 8,000 digitized images covering every eight yards of the Muirfield Village Golf Club in Dublin, Ohio, as well as a digitized version of Jack himself to play against.

Nintendo

Other new titles shown at CES include the Guinness CDTV Disc of Records, Dinosaurs (a CD comic book in the tradition of Teenage Mutant Ninja Turtles), Wayne Gretzky Hockey CDTV, Trivial Pursuit (with animated graphics, sound effect, and stereo music accompanying 2,000 trivial questions), SimCity, Xenon 2, Falcon, and Sea Beast and Maelstrom from Sullivan-Bluth.

The show wasn't all CDTV, of course. A number of companies were showing their latest wares for the Amiga, IBM, Nintendo, and Sega platforms.

Nintendo's Super NES booth dominated the software floor, although the machine didn't seem to generate the level of excitement many expected. There were some killer games shown for the IBM PC, including Chuck Yeager's Air Combat from EA, and Wing Commander II and Strike Commander from Origin. The new Origin games were probably the most technically-impressive programs shown at CES, but the bad news is that there are no plans to port them to the Amiga (considering that the recommended minimum hardware platform for Strike Commander is a 20MHz 386 PC with 2MB of memory, it's not hard to see why).

Dungeons

The good news is that Origin plans to release a version of Wing Commander for the Amiga before year's end, and they promise they'll do a much better job porting it than they did on the poorly-converted Ultima series.

Electronic Arts' upcoming releases include Black Crypt, a Dungeon Master-style game with 12 dungeons painstakingly rendered in 64-color halfbrite mode. Battle Island from Ubi Soft (distributed by EA in the U.S.) looks to be a real treat for wargamers, as does Mindcraft's The Rules of Engagement.

California Dreams, another EA label, will be releasing Solidarity, a simulation that puts you in the shoes of a Polish labor leader and gives you a chance to recreate the steps that led to the country's freedom.

Arena Entertainment, MirrorSoft's U.S. label, showed off Reach for the Skies, a fantastic Battle of Britain flight simulator. Unlike Lucasfilms' similar offering, Reach for the Skies uses polygon graphics and presents impressive animation speed even on an unaccelerated Amiga.

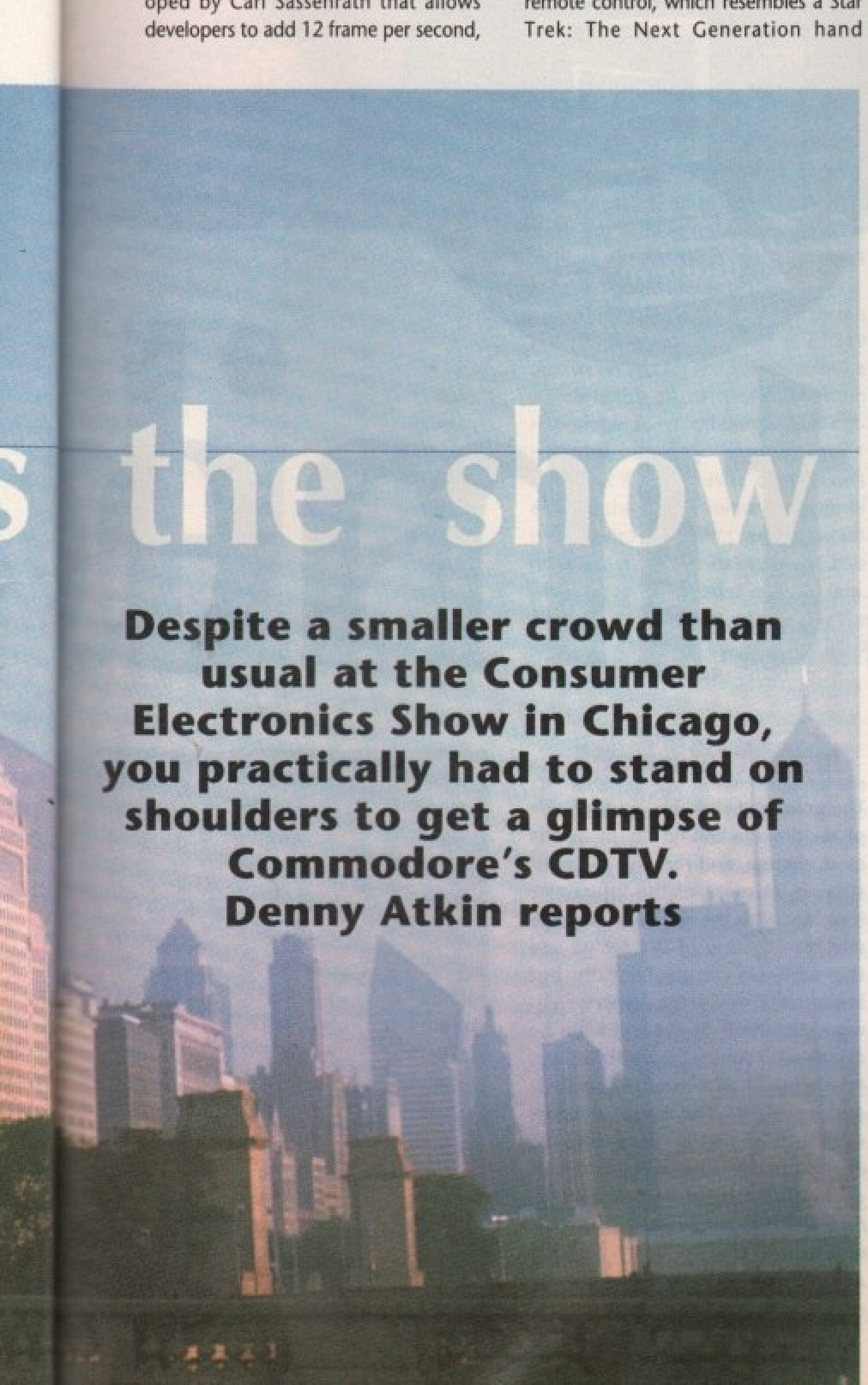
Finally, Psygnosis gave me a private preview of their upcoming Amiga titles for release in the U.S. and U.K.

Barbarian II is similar to Barbarian, one of the company's first Amiga releases, but is much more playable. Aquaventura is a fast-action arcade game featuring first-person action, horizontally scrolling shoot-em up sequences, and 3-D tunnel sections.

The real winner for arcade fans, though, promises to be Leander, a 22-level platform arcade game with the best graphics yet in a Psygnosis game. Although I didn't see them, look forward to Shadow of the Beast III around Christmas, and Lemmings II early next year.

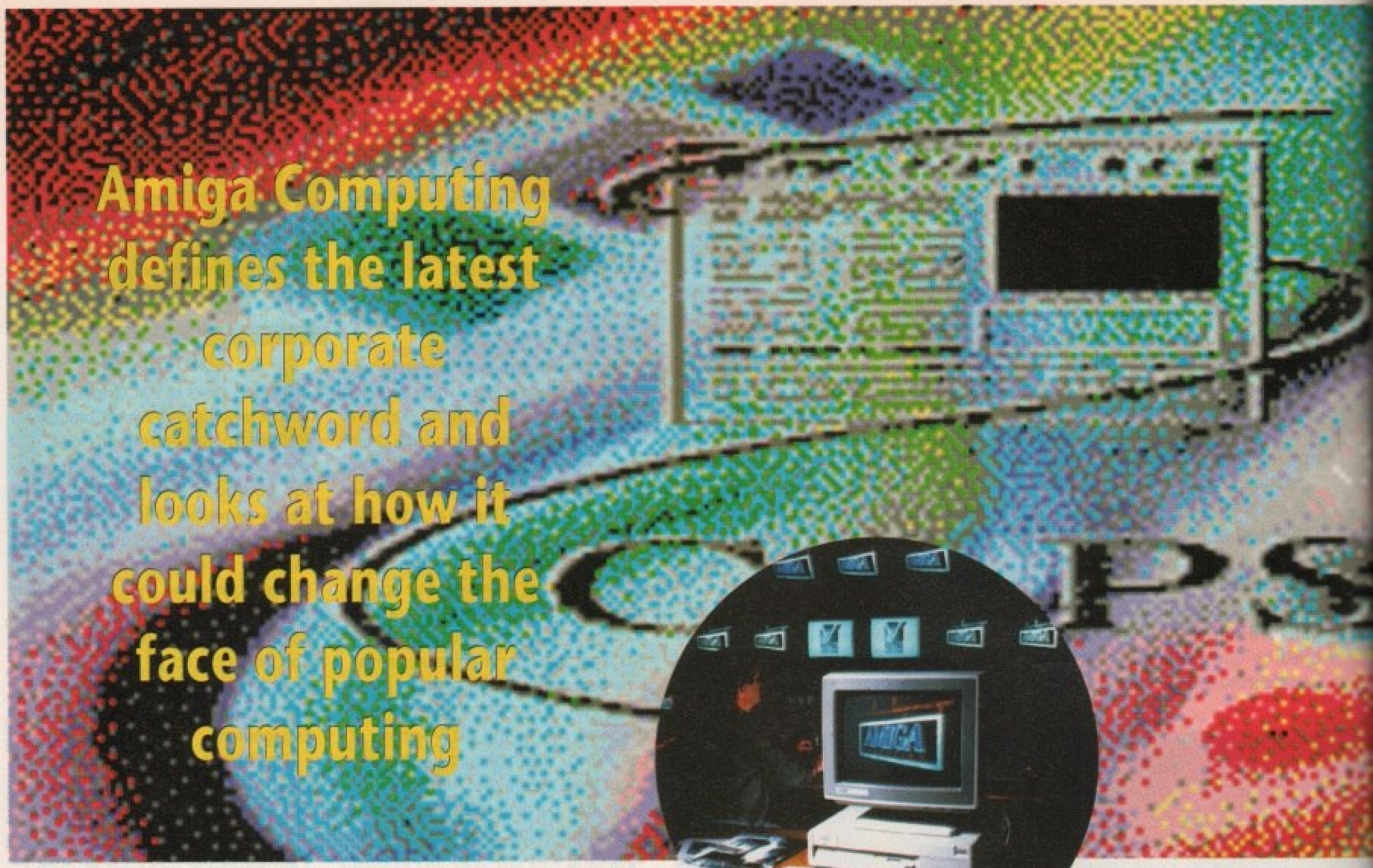
That's it for CES highlights. As this article went to press, news reached me that Commodore had actually sent Kickstart 2.0 off to the rom burners, so the new operating system should be available as soon as the company's marketing department gets the packaging ready.

According to a well-placed source, the final release of 2.0 may contain a few surprises, such as scalable outline fonts. Hopefully I'll have more details in next month's column.



s the show

Despite a smaller crowd than usual at the Consumer Electronics Show in Chicago, you practically had to stand on shoulders to get a glimpse of Commodore's CDTV. Denny Atkin reports



Amiga Computing defines the latest corporate catchword and looks at how it could change the face of popular computing

Multime

Multimedia is one of those phrases you'll hear bandied about with gay abandon as advertising executives guzzle down spritzers while moaning endlessly about the state of the piste and how life has never been the same since the Crash. And if you ask what this mystical multimedia is, the answers you'll receive will probably be as varied as the people questioned.

In general terms, it's best described as the easing of interaction between machines, people and the real world. This takes many forms ranging from the user friendly control of hardware such as video recorders to the interactive presentation which avoids the usual constrictions of a computer environment.

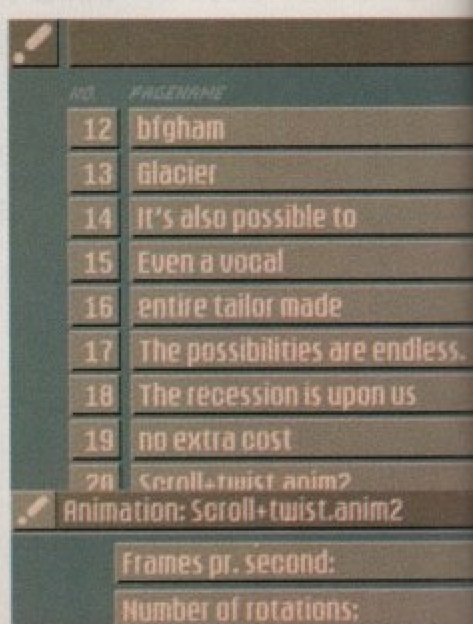
Multimedia is, or should be, the panacea for all computer users' ills. Its sole aim is to make information and the abilities of the computer freely available to anyone, anywhere.

Because of the Amiga's endless list of talents it's an obvious choice for anything which requires supreme power and flexibility, and as a result it has been greeted with open arms by the purveyors of the new age of interaction.

The multimedia explosion is almost upon us, and as a result a whole stable of high power and high price hardware and software packages are appearing almost daily. Some costly decisions will have to be made, and hopefully the following article will show what's available and where best to invest.

Instant information

The point-and-click, buy-and-sell side of multimedia will no doubt be the most obvious, and certainly the most striking, element of the interactive invasion. With the relatively inexpensive combination of the Amiga and the embarrassingly friendly but immensely powerful display software, the High Street will soon be awash with Amigas advertising and informing on all manner of products and services. The shop window equivalent of a scrolly demo isn't the only place due to feel the winds of change – reception areas, restaurants, information centres – the list is endless, and choosing the right package requires a lot of thought and advice, so here we go.





dia



Animations can be dragged into the action in a matter of moments thats to the talents of old favourites such as Dpaint.

InfoChannel

If you're going to start anywhere, start at the top, and InfoChannel is certainly that for both price and performance. It's perhaps the premier interactive display system for the Amiga, being by far the easiest to use and most stylish of the available systems.

For all its power and glamour there's a price to be paid, and to be honest the cost of InfoChannel is frighteningly high in relation to anything seen before on the Amiga. Of course, no one claims that InfoChannel is aimed at Alf's corner shop, and if you're a corporate raider such piddling figures will barely raise an eyebrow.

Frightening figures

The basic InfoChannel system consisting of eight disks, one weighty ring-bound manual, and not much else will set you back £1249. This allows a single link with a satellite machine over a distance of a few hundred metres.

This is InfoChannel in its simplest form but if you're looking for more satellites, the initial cost soon becomes nothing more than a fond memory.

For example, each extra satellite machine requires a separate player module which adds another £874 a time, and without this software dongle in place the receiving machine won't even give you the time of day.

As well as the player module there's the added insult of another £1249 thrown on top for the Infinity software which is the element of the system responsible for distributing Info's output to the network.

And as if all this extra expense isn't enough there's the minor problem of the satellites themselves, each of which requires a minimum 20 meg hard drive plus a recommended 3 meg of ram. Then, of course, if you want to use the system's networking talents to the full it will need its own resident modem.

What's on offer?

OK, let's say you've remortgaged the house and bought the system. What do you get? Quite simply one of the most powerful and easy-to-use authoring packages on the market which allows you to import Ham images – whether they be scanned or digitised creations of your own or one of the many high quality IFFs provided with the system.

These backgrounds are then used to form the backdrops onto which stylish broadcast-quality text with its wide range of wipes, fades and effects can be presented.

The system allows total control of the page and its creation. For example, each background image can be drawn into the action using a huge range of effects, the likes of which were previously available only to those working with Paintbox – the hardware responsible for 99 per cent of all TV effects.

The next step is to suck in some text. Because InfoChannel treats each line of text as an individual it can be assigned its own definable effect. For example, each line of the message can zoom in from a separate direction or materialise in a predetermined position. As with the backgrounds, a whole range of wipes, fades and general special effects can be applied.

The system uses any standard Workbench-friendly font, but it could be some time before you dig up your old favourites from Workbench because InfoChannel boasts a wide range of perhaps the best fonts yet seen on the machine. The selected font can be stylised with the usual options of Bold, Italic and so on, but this is merely the tip of the iceberg as a complete palette of colours, drop shadows, borders and 3D effects – all adjustable for size, colour and orientation – are waiting. When this designer-animated text is combined with complete control of positioning, effects and timing, the only limit is your imagination.

To add to the excitement, animations can be imported. So, for example, corporate sales pitches could be given added impact by using the odd logo spinning into the picture.

Any standard Amiga animation package such as Dpaint can be employed to add the Disney touch to a presentation, and thanks to the simple scripting controls the same sequence can be revisited throughout the masterpiece.

Interactive element

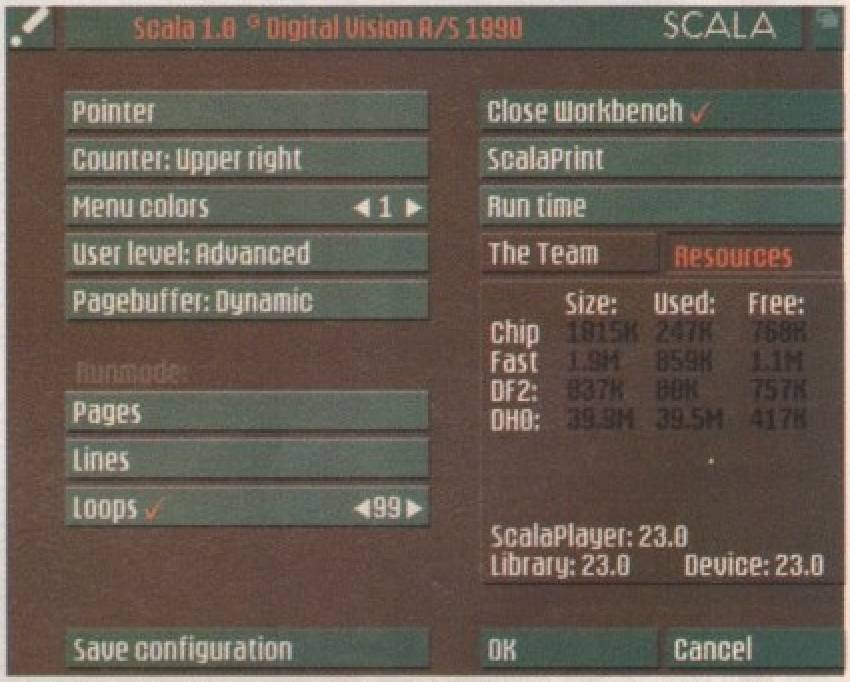
If InfoChannel was merely a sexy titling system it would hardly count as a leading light within multimedia. By definition, multimedia implies interaction between the Amiga and other systems, whether they be human or machine.

In the case of InfoChannel the interaction is strictly with the anthropological alternative, it does not control any video recorders, CD units or any other form of hardware.

InfoChannel's main aim is to inform,



A prime example of InfoChannel in action as the finishing touches are added to a marketing masterpiece



A quick glance at the state of the sytem and it's back to the action in the page designer

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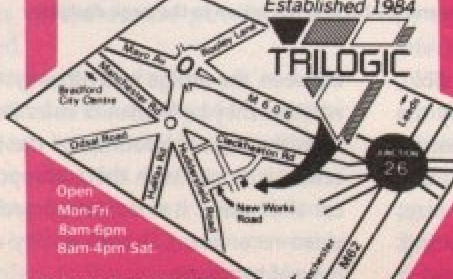
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Scala – the alternative InfoChannel

and to maximise its effectiveness a simple script language is used to divulge information in a form of hypertext.

For example, a travel agent might create a series of yes/no questions which lead you through a number of resorts showing you the sights, the hotel rooms, the beaches and so on while the text zooms in to add detail. If you get bored it's straight back to the main menu for an alternative browse around the planet.

Another application would be as a silent receptionist which, at the click of a button, would point the way to the toilets, direct you around the building or suggest the best place to buy a burger.

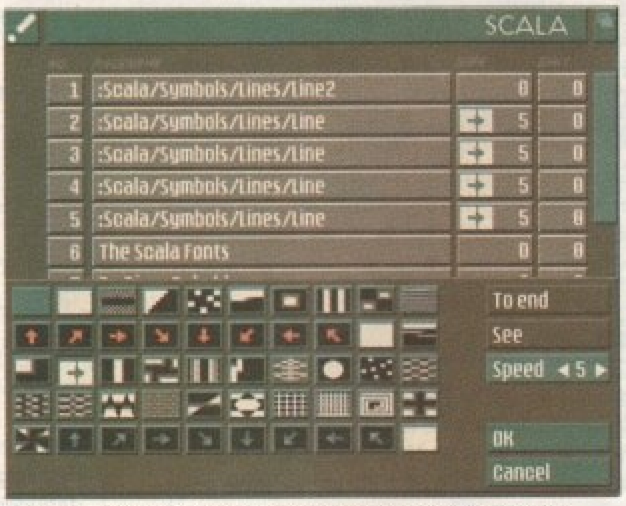
Of course, when left alone it could return to toeing the company line with an endless stream of logos and product information.

All this designing, scripting and general fiddling does sound like a disaster in the making, but with as little as a morning's tuition a complete novice could easily produce a sequence that would leave onlookers agog.

The creative process couldn't be simpler and even the most complex interactive scripts take no time after just a little practice.



InfoChannel's at its best, stylish graphics with interactive icons



Linewipes made easy, simply select the effect and sit back as the scripts scroll smoothly in...

Regular readers are likely to find InfoChannel's approach to exhibition familiar due to its more than passing resemblance to Digital Vision's first multimedia release, Scala. To say the two are similar would be an understatement. They are almost identical. In fact, if it wasn't for the logo in the corner of the screen it would seem impossible to tell one from the other in all but one or two screens.

Both use exactly the same design system, but InfoChannel has the ability to transmit to other machines, and an option for infinite rolling display as opposed to Scala's maximum of 99 loops.

The only real difference between the packages is in the main program itself. All the support disks are identical and if both programs are placed in the same drawer, each will happily share all the available scripts, backgrounds, fonts and layouts with its companion.

The obvious question is, why pay the massive asking price for InfoChannel and the seemingly endless supply of expensive software dongles if Scala is almost identical? Well, it's the "almost" which makes all the difference.

InfoChannel is aimed squarely at the corporate market such as hotels, conference centres and so on. In short, anywhere that requires multiple outlets all instantly controllable from a central point.

If, however, your needs aren't quite in the corporate league Scala's £250 asking price looks very attractive in relation to its big-budget alternative. OK, you'll have to copy files onto floppies and run extra machines independently, but considering the alternative, Scala is likely to be the option for most.

Hyperbook

Hyperbook as the name suggests takes the interactive side of multimedia to its logical extreme. Its approach is that of an interactive workhorse and information centre rather than an all-singing, all-dancing display and sales tool like Scala or InfoChannel.

It uses the standard Workbench environment as opposed to a custom front-end like its glossy rivals. So its presentation isn't as stylish as the expensive alternatives, but considering that it's a fraction of the price of any of them it's bound to be high on the shopping lists of mere financial mortals.

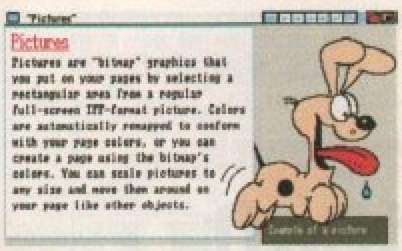
The Workbench-friendly element does sacrifice a little style and panache but it means that Hyperbook is totally happy about interacting with other Workbench-based programs and utilities. This particular talent has been exploited to the full by the designers and all manner of applications can be called on by the program's Dos and ARexx options.

For example, if a page contains references to animation or artwork, an onscreen button could be assigned to locate an external player, load the animation or IFF and return to the original page after it's displayed. This means that the simple framework of the program can be expanded almost indefinitely.

It's fair to say this approach does require more knowledge than other systems but the possible applications are as varied as the Amiga's talents.

As with all multimedia applications a hard drive is an essential for any serious user although Hyperbook, unlike all its rivals, will operate on as little as a half meg Amiga.

Having said that, the storage and fast display of graphics and text is what makes the system usable, hence the necessity for the HD and a reasonable amount of memory.



Oddie, Garfield's faithful friend, bounding through a Hyperbook page in glorious colour. Education made easy...



Hyperbook with its multiple choice approach to multimedia

Easy editing

As well as the cash saving and flexible design, the production of the pages themselves is extremely simple, being a cross between basic DTP and a paint package.

All the design tools are lined up ready and waiting and a plethora of pull-downs add the necessary options to control, tweak and generally fine-tune each page

Hyperbook doesn't have all the whistles and bells of some systems and apart from the occasional whip and funky fade, things are fairly static with special effects kept to a minimum. The only real moan is the program's dislike of Ham pictures which suffer badly when imported to a page. Of course, you could always display them separately thanks to the Dos and ARexx options.

Overview

Hyperbook is probably not the best choice if you want to stop shoppers in their tracks, but if your needs are to inform, educate and generally assist the user, it's the perfect option.

HiSoft BASIC

A BASIC Standard

HiSoft BASIC is the answer to your programming prayers; a fast, interactive and easy-to-use 68000 BASIC system conforming to the industry standard for the BASIC language.

HiSoft BASIC is designed to be as compatible as possible with the AmigaBASIC interpreter, while offering you a friendlier, easier-to-use and infinitely more powerful language. In addition it has many of the features of the world-standard Microsoft QuickBASIC, on the PC.

Some of HiSoft BASIC's features include:

- *Structured programming, using long IFs, multi-line functions, CASE, REPEAT and procedures*
- *Program line numbers are optional, and alphanumeric labels can be used*
- *Full recursion for procedures & functions; local variables and arrays as parameters*
- *Five types of variables*
- *Program size limited only by memory*
- *Variable size limited only by memory*
- *Integer and character constants*
- *Compiles the majority of AmigaBASIC programs without change*

Full support of the Amiga is included as standard with extensive window, screen and graphics commands. Amiga libraries can also be accessed as if they were built-in statements allowing complete machine access.

HiSoft BASIC includes full MENU support, with event trapping and powerful sprite routines, using the OBJECT keywords.

Programs can execute in their own window(s) or use the CLI window for minimum size. CLI-type programs may be easily written and made resident since they are fully re-entrant.

HiSoft BASIC is a no-limits language; string variables may be up to 16Mbytes in length and there are no limits on array sizes either (subject to available memory). Code generated is fully 68010/020/030 compatible.

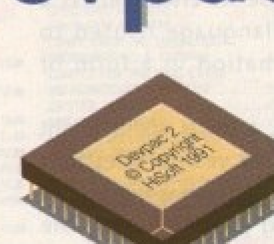
Compiled programs have no run-time overhead; all compiled programs share an Amiga library, which may be distributed with programs without charge.

Extend

An add-on package for HiSoft BASIC, Extend includes routines for handling IFF files, gadgets, sub-menus, sound, HAM mode and much more. It is supplied as a library for ease of use.

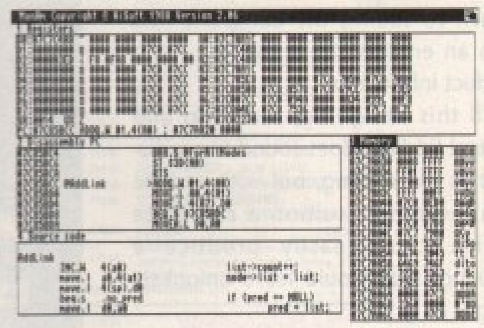
Normally HiSoft BASIC costs £79.95 and Extend costs £24.95 … but see the coupon below for a very special offer for the two packages together!

Devpac 2



Easy Assembly Language

Devpac Amiga Version 2 is widely regarded as the most powerful, complete, assembly language development system for the Amiga. It incorporates an integrated editor/assembler/linker/debugger, together with a stand-alone assembler and debugger and all the necessary include files and many examples.

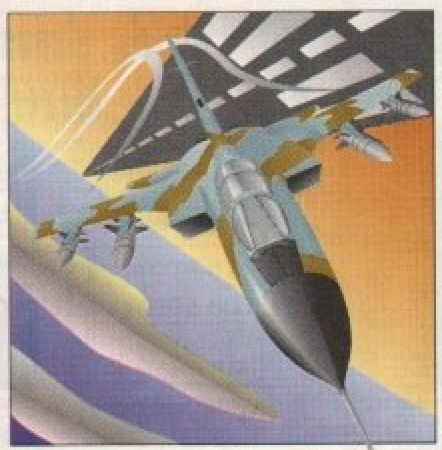


Complete with extensive ring-bound manual detailing all aspects of the package, plus debugging strategies, Devpac is *the* choice for beginners and assembler experts alike.

RRP is £59.95, but see the coupon below for a very special offer on this essential package.

ProFlight takes off!

ProFlight, the extremely accurate and flyable Tornado flight simulator from HiSoft, is *now* available for all the Amiga computers.



First released on the Atari ST where it has won a high degree of critical acclaim from reviewers and users alike, ProFlight is not only one of the most technically realistic simulators around but it is also tremendous fun to fly. As you would expect, the Amiga version has much improved sound and graphics!

You can fly peaceful reconnaissance missions or roar into attack after carefully planning your combat mission. ProFlight is supplied with a comprehensive, ring-bound flight manual.

SAS C5

SAS Institute (the parent company of Lattice Inc.) has taken over the development and sales of the Lattice C 5 compiler for the Amiga and released a new version, 5.10a.

The major features of this latest version are:

AmigaDOS 2.0 support, LSE AREXX support, improved Workbench usage, many performance improvements, support of _aligned, automatic near to far conversion, C++-style comments, compile/link options now read from an environment variable … and more.

We believe that these improvements and enhancements in this version establish SAS C5 as the ultimate Amiga C compiler. The package includes 680x0 compiler, linker, screen editor, assembler, highly intelligent global optimiser, source level debugger, code profiler, librarian and a host of tools and examples.

SAS C5 from HiSoft costs £229 (but see our special offer on the coupon) and includes full UK technical support, which is not available from other sources.

Upgrades cost £34.95 (from version 5.0x), £79 (from version 4.xx) or £99 (from version 3.xx).

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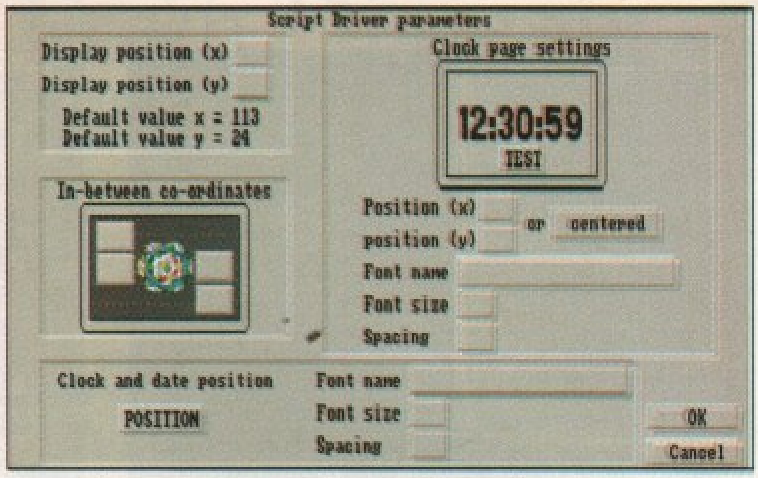
Special Offer

The CAPS lock

A credible contender for InfoChannel's crown presents itself under the name of CAPS an acronym of Computer Aided Presentation System. CAPS XL, to use its full title, hails from The Netherlands-based 1001 Software Development and is designed to match InfoChannel, albeit via radically different means.



CAPS is an icon-driven beast, clearly illustrated by the workstation main menu



It is possible to configure the script driver remotely from the workstation, including screen positions and how the clock is displayed

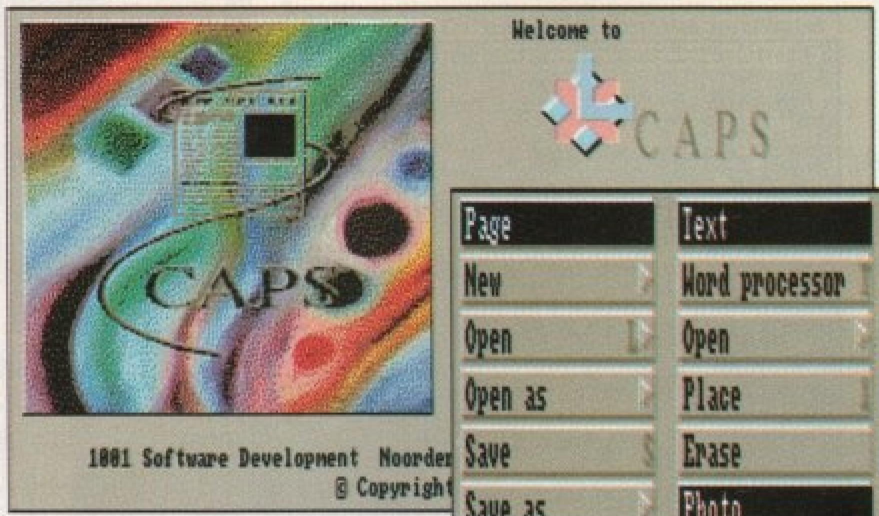
CAPital expenditure

Before telling you why you can't live without CAPS, it makes sense to give some indication of what it can't live without. Just like other systems, CAPS will not be prepared to slum it on a low-spec Amiga configuration.

Sit down, take a deep breath and get the following hardware together: one Amiga with eight megabytes of available hard disk space and three megabytes of ram. Add to this a second Amiga, this time with a mere four megabytes of free hard disk space and a modest two megabytes of ram.

Having assembled the hardware and connected the two supplied dongles, it is a simple matter of configuring one machine as a CAPS workstation and the other as a CAPS script driver. These should then be linked either direct or via a modem using a standard serial cable as appropriate. Configuration is achieved by a very simple and comprehensive install utility. It really is a case of point, click and watch that disk space vanish.

The result is an information display comprising various components such as IFF files, text messages, Deluxe Paint animations and video sequences. These elements are composed on the workstation Amiga before being transmitted to the script driver Amiga for constant display. The script driver is nothing more than a dumb storage and display device. Once configured, it can be left running a CAPS display sequence without any further user intervention.



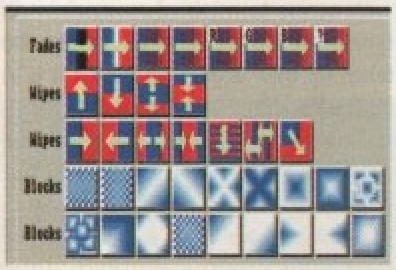
A very stylish welcome to CAPS awaits anyone with enough money, memory and hard disk space



Creating CAPS pages is a simple matter of pointing and clicking... and pointing and clicking... and pointing and clicking

The workstation

The workstation is used to create "pages" of information and display "scripts." A page consists of various windows. Each window can consist of text, graphics or a combination of the two. Page creation is achieved via a rather primitive screen-based desktop publishing-style layout system. This relies very heavily on menu selection and some keyboard hot-keys which border on the cryptic.



Page transitions and wipes are not dissimilar to those of InfoChannel

After pages have been created they can be compiled into CAPS scripts A script is a sequence of pages which are displayed cyclically. CAPS is slightly more powerful than InfoChannel in this respect. Rather than simply stringing pages and animations together, it is possible to include other dynamic elements within CAPS scripts. These include a clock page and randomly generated "interlude" sequences.

The authors of CAPS say it is possible to control an external video device, allowing cue, start and stop functions to be integrated into a CAPS script. This function requires an additional software module which it was not possible to review during the compilation of this feature.

Conclusion

Although CAPS and InfoChannel set out to achieve the same end, they approach multimedia from two refreshingly different angles. There is no doubt that in terms of ease of use and creative control, InfoChannel wins hands down.

CAPS does however offer more display flexibility. Using CAPS it is possible to schedule events for specific days and times, something which Digital Vision's system fails to offer at present.

The CAPS system weighs in at around the £1,000 mark. Not cheap, but still a modest financial commitment compared to an InfoChannel system in all its glory. Further details are available from sole UK distributor Alternative Image on (0533) 440041.

AmigaVision

AmigaVision is Commodore's own Authoring System packaged free with certain Amiga systems in much the same way as Apple included Hypercard with their Macintosh systems.

The AmigaVision manual is quite a hefty tome and daunting at first view – although it does make an excellent doorstop on sweaty afternoons. It is, however, well worth pulling out of its cellophane because after taking the plunge, you will be greeted with a friendly mouse and icon-orientated user interface.

Go with the flow

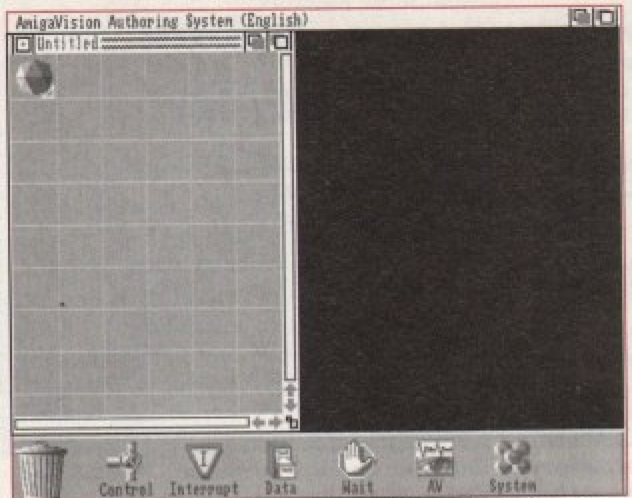
Below the title bar is a window containing what looks like a garden parasol viewed from above with a triangle in the upper right-hand corner on a grid of squares.

This is the Flow Window where the user builds up multimedia presentations.

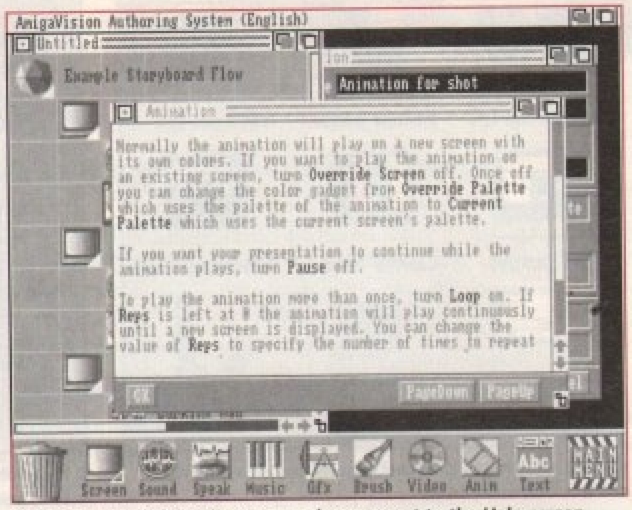
The bottom of the screen has a line of icons which are the keys to subsidiary menus of icons which form the building blocks for the presentations. This Main menu is very easy to use. AV, for instance, takes you to the Audio-Visual menu for incorporating graphics, animation, sound and video in your presentation. The Wait and Data icons are also self-explanatory.

The intuitive layout is what makes the AmigaVision interface a dream to use. It's so friendly that it's possible to begin using AmigaVision after only a cursory glance at the manual. Active elements are brought into play by dragging them from the relevant menu into the flow, just like dragging a file from one drawer to another.

Double clicking on an icon brings up the option requester, whether it be the directory for a picture or the name of a ➤



Scripts start to take shape thanks to AmigaVision's friendly front end



If things get a little tricky you can always resort to the Help screen

➤

text file. It's really hard to do anything drastically wrong! If only all programs could be this robust, the world of computing would be a much nicer place.

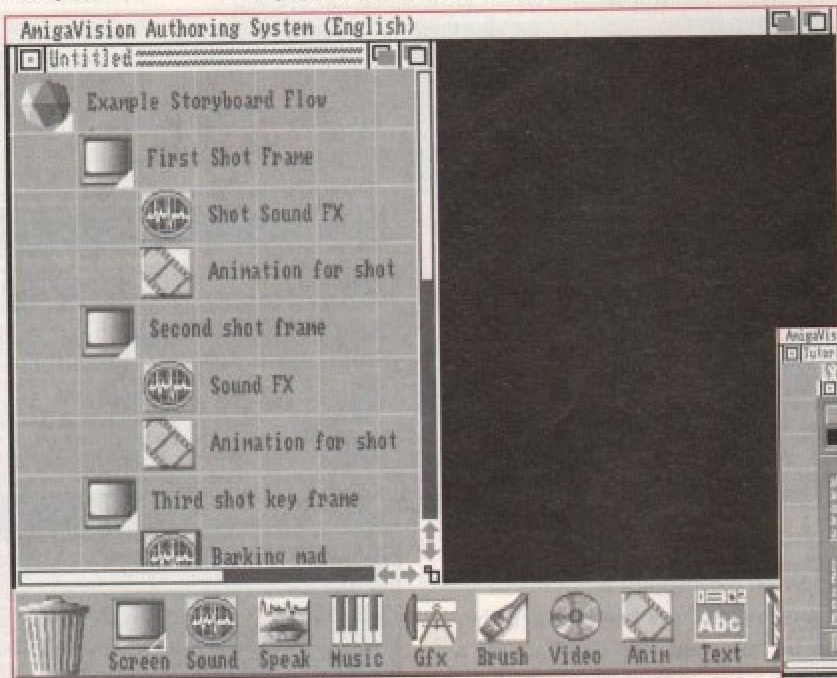
As a bonus, the Help menus really do help! They don't only explain "how" but also "why". The best tutorial is just to try everything and when you get stuck ask for help. With the odd glance at the manual index you can't go wrong.

Say it with pictures

If you can use Dpaint3 you can get a multimedia presentation off the ground. First, create some pictures in Dpaint which you can run in the background with 2 meg of memory or more, and open the screen icon from the AV menu. AmigaVision will automatically detect which screen resolution and palette you used.

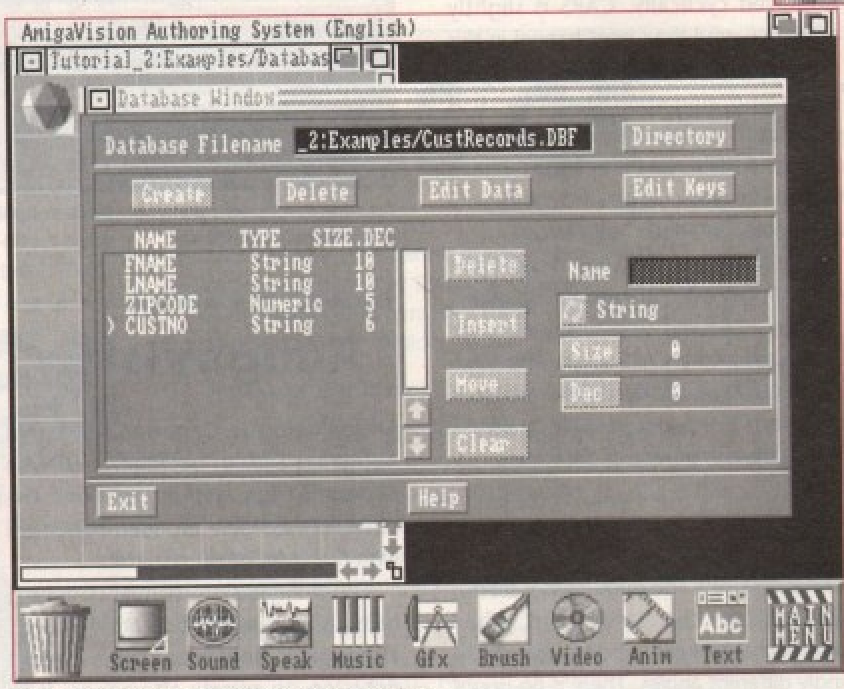
Sound sample rates and animation rates are also auto-selected as long as they follow the IFF and Anim formats. There are a number of other options such as transitions between pictures in your presentation, fades and dissolves, plus some other video style effects, showing how much thought has gone into making AmigaVision accessible to as many people as possible.

AV icon elements can be linked together to allow multiple layers of animation and digitised sound and backgrounds to be timed to coincide. This package *breathes* DeskTop Video.



A full script in all its glory, ready and waiting to inform, educate or boost those sales


Logical operations made easy thanks to the user friendly expression editor



AmigaVision's internal database editor in action

Interactivity

AmigaVision has what is called an Object Editor which can be used to define active Hot Spots on any screen. These Hot Spots are used to give a response to the AmigaVision Flow that can call to other elements of the Flow, or load variables with values to be used later. Hot Spots can be simple shapes created in the Object Editor or brushes imported from a paint program.

When a Hot Spot has been activated it can be assigned another visual or audio response. The Object Editor also allows the user to define the output of variables in any position and font size. Text windows can be placed anywhere in a presentation and tools are supplied to allow the user to scroll through text while within an interactive program.

If you pull up a Data or AV icon the Object Editor can be made available allowing you to assign objects for interactivity without having to come out of the Flow. Also hidden within AmigaVision is a very powerful Expression Editor which allows string, numeric and Boolean operations to be defined.

The list of user-defined variables can be used at any position or time within a Flow just by clicking on the variable from the list in the Expression menu. A full list of mathematical, Boolean and string operators are available so that quite complex variable responses to a Hot Spot or text input can be constructed.

Icing on the cake

Finally we come to the database element of AmigaVision which is one of its main strengths. The Database can be used to search in all the standard ways and the user is given the option of importing Superbase and DbaseIII files.

This allows the user to construct and test a database outside AmigaVision and then import it for the interactive multimedia elements to be added, if need be. Existing material can thus be revamped and reworked for multimedia.

But it's not all good news. AmigaVision is a large program and if you are serious about development you will need some extra memory – 2 meg or more for large presentations. There is also no true runtime module yet available.

This increases the memory overheads when running a presentation as the delivery machine has to carry the overheads for the complete AmigaVision Authoring System (about 600K of code). This slows delivery down and excludes users with only a meg or less who are itching to see what multimedia is about.

This is an important point for CDTV developers who will want to cram as much music and pictures into CDTV's one meg of memory as is possible. Commodore promise to upgrade this soon.

At present, AmigaVision does not support calls to CD-DA, standard CD audio, available in CDTV which means it can't use some of the wonders that CD technology brings. Again, Commodore claim that there is a new version of AmigaVision, version 1.7, about to hit the streets and it will include more device handlers and operators so as to satisfy the demands of developers.

Conclusion

AmigaVision is an excellent package as an introduction to the realms of interactivity and multimedia. Presentations can be put together by even a novice with access to minimal memory in no time at all. It does, however, need to be taken up by a larger user base if it is to be the backbone of Amiga authoring.

The package isn't quite yet the Amiga's answer to Hypercard, but given time it might be. The best way to judge a package is to see if it's being used in the commercial market. We're using it – is anyone else?

➤

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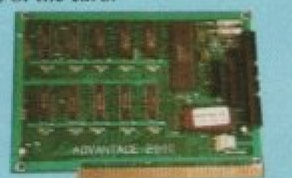
Faster Than any other Competitor "Amiga Computing"

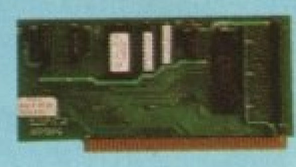
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IVS Trumpcard



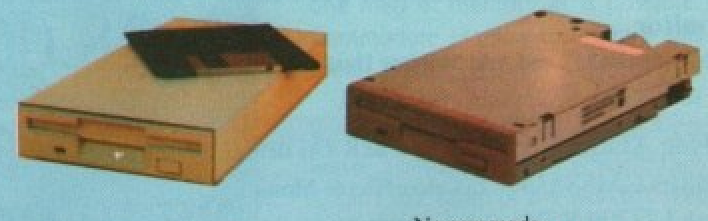


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Internal floppy drive requires no case modification
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No case mods
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ICD AdRAM A500

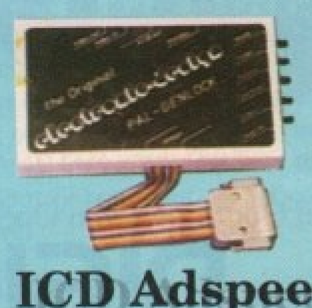
ICD AdRAM for the A500 offers memory expansion from 512K to 1MB then by adding 4 chips it expands to 1.5MB etc. The board comes supplied with comprehensive manual and clock. It takes only minutes to install & requires no soldering. Available in any configuration. Plugs in A501 expansion slot.

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Video

Multimedia embraces many different types of information and formats, but by far its most important feature is the amount of control it offers over video materials. Video is the cornerstone of multimedia without which the multimedia information system would be nothing more than a glorified interactive slideshow.

The hardware is still in its infancy and new developments are announced almost daily. Despite this, the Amiga is at the forefront of developments, especially with the launch of Commodore's CD-based Amiga, CDTV.



Commodore's vision of the ultimate in multimedia CDTV

The CDROM facts

There are many different ways of incorporating and controlling video materials in applications, ranging from basic digitised graphics stored on a hard disk to full motion Digital Video Interactive stored on CDROM. In the early days of multimedia, producers used just about any piece of video kit they could lay their hands on, and multimedia was an indistinct concept.

These days however, outside video, multimedia has focused almost exclusively on CD and laser disk. You'll still find more exotic hardware employed for specific applications but multimedia producers have concentrated their efforts on these two established formats.

In the early days, many saw CDROM as the ideal medium for multimedia work. After all, the CDROM disk could store a variety of information types, and even today other devices are restricted to one particular information format. VCRs only hold moving video, for example, but a CDROM can hold almost anything. With such integration, multimedia systems can now be pulled together at minimal cost.

Another advantage of CDROM is its sheer capacity. Even a fairly basic CDROM can store upwards of 650Mb of information. Compare this with something like an average floppy drive or even a hard drive and you'll soon see why the CDROM format has become so popular. Hard drives can challenge the CDROM in terms of storage capacity, but they are restricted by the kind of information they can hold.

The downside?

That's not to say that CDROM is the answer to every multimedia producer's dream. To begin with, current CDROM technology is restricted almost entirely to read-only operation. You can buy things like WORM (Write Once, Read Many) drives, but these are incredibly expensive and even then they are limited by the same restrictions as the hard drive.

Unless you're prepared to pay the high cost of having CDROM applications professionally mastered, then CDROM is restricted to generic (or mass market) applications. This is a problem plaguing CDTV – you won't find individuals producing multimedia applications on CDTV because of the high costs involved. As it is, most CDROM applications will be general purpose, designed specifically for mass market consumption.



Some of the packages waiting for the multimedia explosion

Another disadvantage of CDTV is that it does not support full motion video, which is a very important aspect of the multimedia toolkit. Several manufacturers – notably IBM and MicroSoft – are pioneering Digital Video Interactive, a system which allows over an hour of video footage to be stored on a standard CD. Using fast on-board compression algorithms, the host computer can pull images in from CDROM and display them in realtime.



The heart and soul of many power applications and perhaps the ultimate multimedia workstation

CDTV very nearly scored its own form of DV-I technology – Commodore had originally intended to build in the necessary circuitry to allow CDTV to display full motion video in a quarter section of the screen. This would have made it an ideal platform for true multimedia applications.

Unfortunately, it wasn't until the recent launch of CDTV that Commodore admitted that this feature was not included – much to the dismay of those gathered!

Some view this as a missed opportunity for Commodore's multimedia machine but already there are rumours floating around that Commodore's engineers are working on the next generation of CDTV. Codenamed SuperBaby, the new machine will support full motion video directly.

Laser disks aren't dead!

If you want to use live video in your multimedia applications you'll have to invest in an expensive laser disk controller like those used by the BBC for its *Doomsday Project*. With the correct controller card and software, your multimedia applications can call upon (and interact with) TV quality video footage directly.

This is the most powerful aspect of multimedia yet. Uses for it within the education, local government and corporate markets are endless, but it's fairly old-hat in the entertainment sector. Remember *Dragon's Lair*? It's been around for years now, using many of the principles of multimedia before we even knew it. While rather limited in its gameplay, there's no doubt that it demonstrates beautifully the power of computer-controlled laser disk players.

A better example of multimedia in action is Atari's Mad Dog McKray, which uses video footage of real actors, allowing players to shoot it out with "real" bad guys. The level of interaction that Mad Dog delivers is amazing – it's just a shame that the game is so expensive to play! Laser disks, too, suffer from the same problem that dogs CDROM – high costs. Mastering a laser disk is a complex process leaving little room for mistakes.

Not only that, but it's an expensive medium to work with unless you intend to market your disk commercially. The cost of the hardware needed to play laser disks is also considerably greater than a CDROM drive, explaining why CDROM has been greeted with such enthusiasm.

Control your media

Controlling all of these video widgets poses another problem for the multimedia producer. If you're using an industry standard authoring system such as Commodore's AmigaVision, the driver you require should already be available. AmigaVision comes as standard with drivers for the more popular video decks including those produced by Panasonic, Sony and Pioneer.

But what happens if you're using one of the less well known packages like INOVAtronics' CanDo or Deluxe Video 3? The answer lies in William S Hawes' advanced message passing system, ARexx

Now that it's an integral part of the Amiga's operating system (in Workbench 2.0), hardware vendors no longer need to write drivers for specific applications. Simply by producing a generic driver that can be controlled via ARexx, any ARexx-compatible multimedia authoring system should be able to drive that device directly by issuing commands through an ARexx port.

Unfortunately, the true power of ARexx has yet to be harnessed. Getting third party developers to adopt ARexx hasn't proved too much of a problem for Commodore, but no one has used it to its full capabilities.

With the eventual launch of Workbench 2.0 for the A500, ARexx will hopefully be taken more seriously. Until then it seems it will remain a powerful but underused Amiga tool.

Using video in your multimedia applications is currently an expensive task that will remain out of the scope of most users for a while yet.

The multimedia revolution, however, is just beginning to gain ground and before long we'll all be able to afford to produce multimedia applications featuring full interactive motion video. ➤

Music and Audio

While video is very much restricted to high budget applications, music and sound effects can be used in your own multimedia productions with very little outlay.

The reason for this is simple – while even basic video requires the use of some expensive equipment, you already own the hardware required to generate music and sound effects in the shape of the Amiga.

There's no reason why you need to buy music-generating equipment for your multimedia production. The Amiga has built in to it some impressive circuitry that allows it to produce the kind of sound effects and music which would have turned professional musos green with envy a few years back.

Wonder widget

The key to all of this power is an ingenious little widget called the sound sampler. Most of us might use them for little more than making Granny sound like Chip 'n Dale on a wet Sunday afternoon, but they have a serious use for multimedia authoring.

Sound samplers can be picked up for around £30 these days, so there's no excuse for not rushing out and buying one now. The most expensive thing about using sampled sounds is the cost of memory and the storage device needed to hold your samples.

Sound samplers provide a quick and easy solution to the problem of adding music to multimedia productions. You'll have to be careful not to infringe copyright, but simply by looping passages it's easy to produce impressive music.

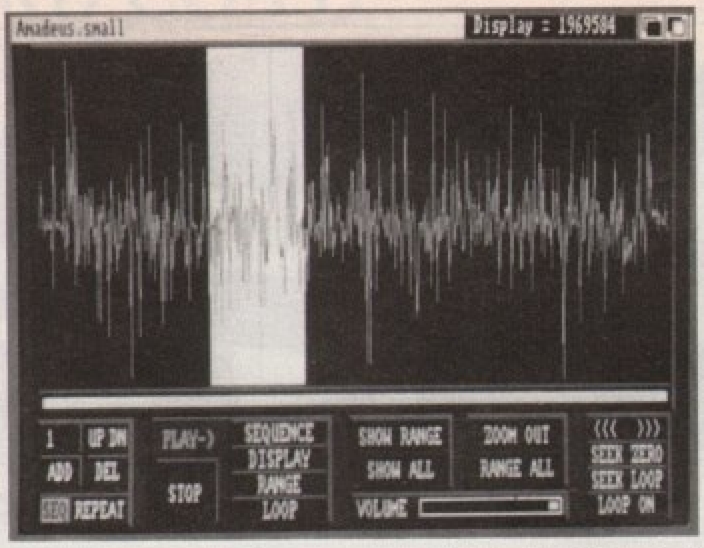
Composition corner

If you require an original piece of music, the next thing to invest in is a decent music program. But be warned, it's worth checking first to find out what type of music your system supports. The most commonly accepted format for music within multimedia packages is Aegis' IFF SMUS.

Packages which will generate this type of music file include Aegis' own Sonix and Electronic Arts' Deluxe Music. Micro Illusions' Music-X will read SMUS format files, but there's no conversion tool to reverse the process.

For point-of-sale applications and so on, you might want some form of spoken commentary to guide the user through the finer points of your production. This can be handled by sampling a real human, but such samples swallow up large chunks of hard disk storage space.

A better bet is to use the Amiga's own speech synthesiser. It's not the best of speech synthesisers, but it's worth using to save on valuable hard disk space. If you're lucky enough to have Workbench 2.0 you'll find that the speech synthesiser has been improved substantially, making it easier to understand.



Audio Master – probably the best sampling software on the market

Adding Midi muscle

If the sound your Amiga can generate isn't up to scratch for your particular needs, you can call upon studio-quality sounds using the musician's best friend, Midi. By its very nature, Midi is ideally suited to multimedia applications.

Although connecting Midi instruments to a multimedia system may sound like a rather long-winded (and expensive) way of adding music and sound effects, the great thing about using Midi is that you have at your disposal a massive array of Midi-compatible hardware for use within your system.



Sound Master is the hardware that's launched a thousand sound effects

Apart from the usual selection of professional-quality synthesisers, samplers and drum machines, you can buy Midi mics and even Midi-controlled switchboxes which can be used on various pieces of equipment.

You could, for example, control a desktop light through Midi by connecting the power line of the light to a Midi switch box. By programming your system to send the correct Midi messages, the light can be turned on and off. When applied to multimedia, the applications for something like this are almost limitless.

Midi is often criticised for being rather simplistic, but it is this simplicity that makes it ideal for budget multimedia production. Just because it was designed for musical uses doesn't mean you should restrict yourself to this application.

On other machines Midi has already been used successfully for such things as networking and even multi-user games. Networking is probably the most useful of the two, especially when you consider how simple it is to get a useable Midi-based network up and running.

Sumptuous SMPTE

Extending the multimedia ideal still further, it's possible to synchronise music and video material with pinpoint accuracy using a system called SMPTE (Society of Motion Picture and Television Engineers).

More commonly called SMPTE/EBU (the EBU bit stands for European Broadcasting Union), SMPTE was devised in 1969 to allow television engineers to sync video and music with single frame accuracy.

One of the more outrageous users of SMPTE and MIDI Time Code is that prolific French synth composer Jean Michel Jarre. Jarre uses SMPTE extensively during his impressive open air concerts to allow him to synchronise his music with external devices including light sources, lasers and those infamous Jarre fireworks.

If you were lucky enough to catch Jarre's Destination Docklands concert back in 1988, you would have witnessed a vivid demonstration of the power of Midi and SMPTE.

Of course, Jarre's coffers are slightly healthier than those of we mere mortals, but that's not to say that SMPTE is expensive. Although much of the hardware which accepts SMPTE time code tends to be restricted to the professional end of the music market, the hardware necessary to allow your Amiga multimedia system to interface with SMPTE compatible hardware is fairly inexpensive.

A couple of companies produce SMPTE time code generators. These include Microlllusions and Dr T's Software, both of which produce music products that can take advantage of the SMPTE standard (Music-X and KCS 3.0 respectively). Both support the four more common SMPTE formats including 24 FPS (Frames Per Second), 25 FPS, Non-Drop Frame and Drop Frame.

The ARexx factor

Once again, ARexx proves to be a key factor in the music side of multimedia. Although music software vendors seem to have been less keen to build support for ARexx into their products, it's only a matter of time before these companies too realise the importance of data portability. And several companies have already jumped onto the ARexx bandwagon, so it's possible to use ARexx to a certain extent already.

SunRize Industries' impressive range of 12 and 16-bit sampling cards lend themselves beautifully to multimedia applications through their support for ARexx, Midi and even SMPTE. SunRize see the cards being mainly of interest to Amiga musicians (hence the Midi support), but the inclusion of SMPTE and ARexx support is sure to see them being adopted by multimedia and Desktop video fanatics.

Once these cards are installed inside your multimedia workstation, you'll be able to call upon CD-quality audio held on hard disk. With this high quality at your disposal, such applications as voice recognition suddenly become a reality.

Glossary

AUTHORING SYSTEM – the computer hardware and software that is used to construct a presentation. The system is often larger and more powerful than the eventual delivery system the presentation is aimed for, eg Amiga 3000 developing for CDTV.

DELIVERY SYSTEM – usually a stand-alone unit that gives users access to an interactive multimedia presentation.

HOT SPOTS – either visible buttons or hidden areas within a presentation that allow interactive elements to be brought together. These are fully definable and there is usually no limit to the number that can be onscreen at any one time.

INTERACTIVITY – the ability for users to ask questions of and receive responses from the delivery system and presentation, and to act upon them leading to other options or questions.

RUNTIME – Runtime modules are executable objects which can operate independently of the authoring system on suitable delivery systems

STORYBOARD – a collection of key frames from a film or video script which allows the director and clients to visualise a scene

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- **MUSIC SOUND TRACKER**
With Sound Tracker you can find the complete music in programs, demos,etc. and save them to disk. Saves in format suitable for most track player programs. Works with loads of programs!!
- **AUTOFIRE MANAGER**
From the Action Replay II preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power? Joystick 1 and 2 are set separately for that extra advantage!
- **DISKCODER**
With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. 'Tagged" disks will only reload when you enter the code. Very useful for security.
- **PREFERENCES**
Action Replay II now has screen colour preferences with menu setup. Customise your screens to suit your taste. Very simple to use.
- **DISK MONITOR**
Invaluable disk monitor - displays disk information in easy to understand format. Full modify/save options.
- **DOS COMMANDS**
Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.
- **DISK COPY**
Disk Copy at the press of a button - faster than Dos Copy. No need to load Workbench - available at all times.
- **BOOT SELECTOR**
Either DF0 or DF1 can be selected as the boot drive when working with Amiga Dos disks. Very useful to be able to boot from your external drive.

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A new dog learns old tricks

Classic fun with the Amiga versions of two of the best ever oldies!

Cast your mind back to what some call "the good old days" of the early arcade machines, and with a steady mind unaffected by fawning sentimentality you'll be forced to agree that most of the original games were a waste of 10p. Not so Missile Command and Asteroids.

Since the first home computers started to bring the arcades into our homes, these two games have appeared in countless versions both commercially and, more recently, in the public domain. For the disk's game of the month therefore, we decided to double up and bring you twice the usual classic arcade action.

The Missile Command conversion on this disk is by Max Bithead of Boulder Colorado, and is a "beerware" game. In other words, the author wouldn't mind if you sent him a six-pack in the post! The Asteroids clone is by Rico Mariani.

Missile Command

The object of the game is survival in the face of a hail of nuclear missiles. To stay alive as long as possible you must use your own anti-missile weapons to intercept the incoming nukes.

You could say the programmers were the first proponents of Ronnie RayGun's SDI (Star Wars) initiative! First off, you must choose whether to play a one or two-player game. The two-player option doesn't, unfortunately, involve both players at once in a joint defence, but since it pits them against each other in terms of the final score, you can always pretend you're defending yourself against the other player's missiles!

When the game starts, the player has a limited supply of missiles, represented by a number of yellow dots in the central silo. The nukes descend from the top of the screen, and to stop them the player fires missiles at them.

Mouse missiles

The crosshair mouse pointer focuses your aim, and missiles are fired with the left mouse button. When friendly missiles explode they do so in a ball of flames which lasts a couple of seconds. Any missile which enters this explosion is destroyed, so with careful planning, several nukes can be dispatched with one shot.

The only way to survive more than a couple of screens in this game is to take out a group of missiles with *every* shot, as ammo soon runs out if you blast away indiscriminately. The best playing tip, therefore, is to hold your fire until

THE

you suss out where all the incoming missiles are going, then plaster them at the busiest intersections.

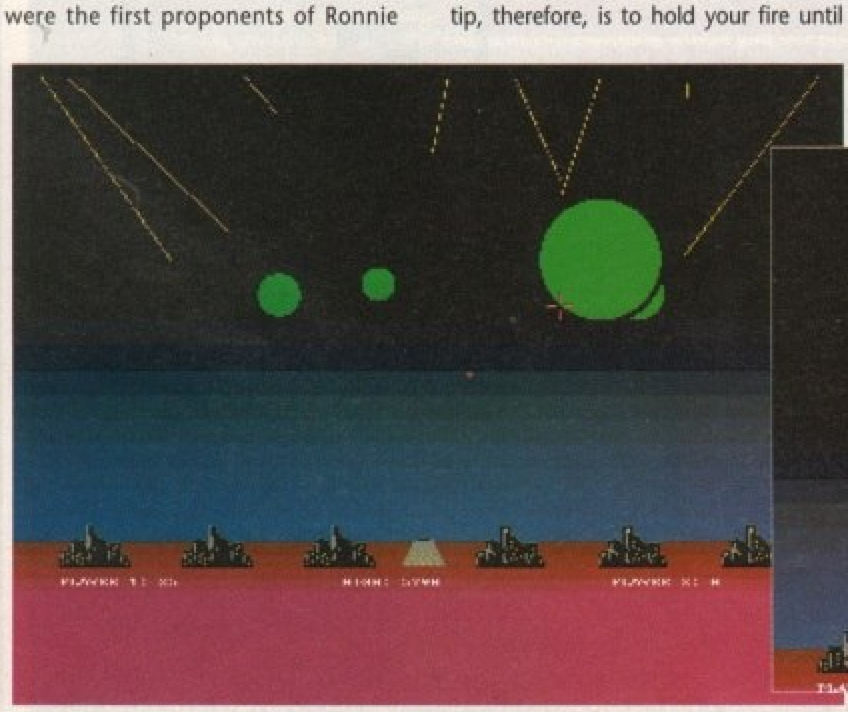
Another tip for the ruthlessly pragmatic is to allow all your cities save one to be destroyed, and concentrate your defences above this city. This is especially useful once the "smart bombs" begin to appear.

Clever cloggs!

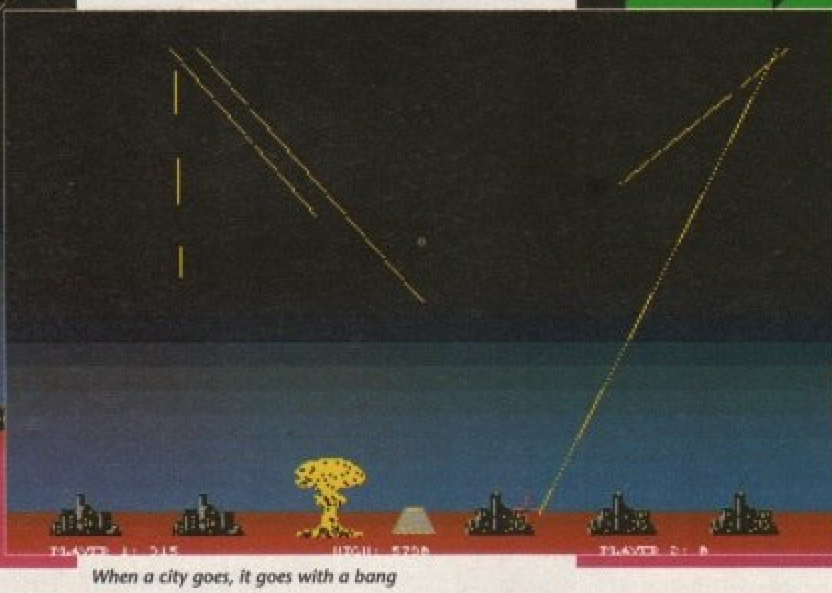
Smart bombs are represented by small blobs which don't leave a trail behind them and which will not carry on in the same path if it will lead them into an exploding friendly missile. For these reasons they are more difficult to track and destroy, as they require a direct hit.

If you hit just below its position, a smart bomb will stop and hover above the explosion until the route is clear again, then carry on to its target. Sort of a cruise missile really, so what with



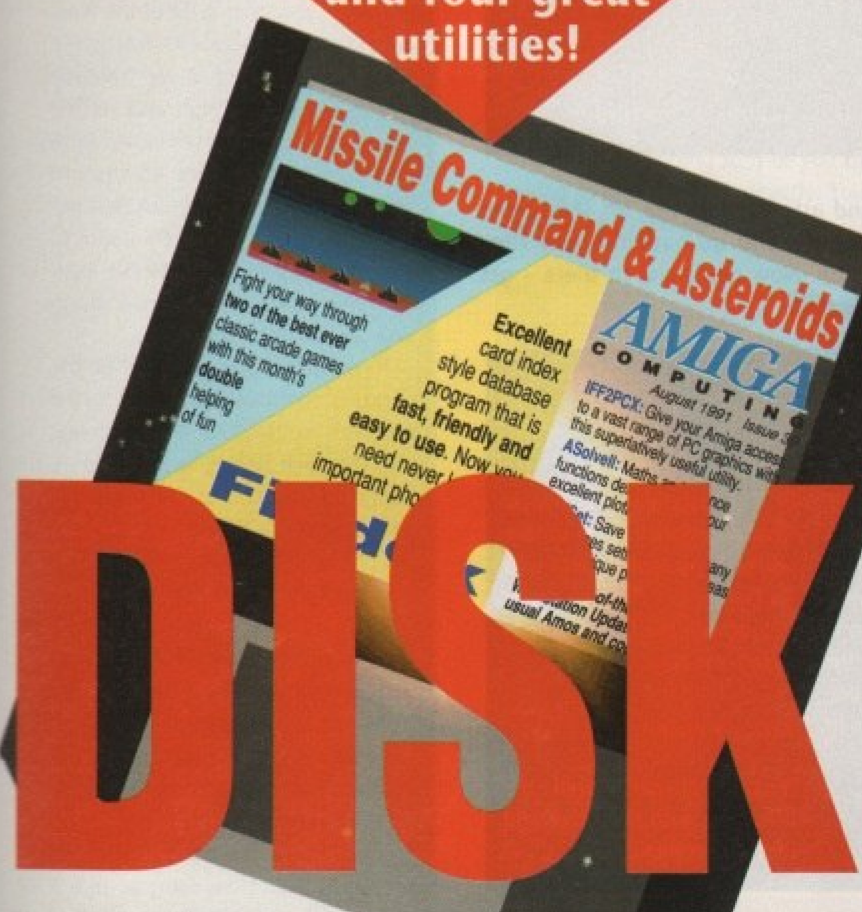


The first wave is easy enough to blast



When a city goes, it goes with a bang

The Disk that no drive can afford to be without – because it's free! TWO FULL GAMES, ONE TUNE, and four great utilities!



DISK

the SDI angle, you begin to wonder if Ronnie didn't pick up a few tips from this game!

On later screens the missiles speed up considerably, leading to the desperate tactic known to old arcade players as "whizz-bang". On the original arcade console the position of the crosshair was controlled by a track-ball, the first to be widely used for a game.

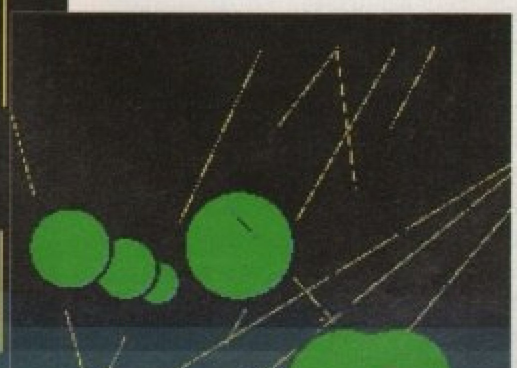
This gave rise to a measure whereby a string of missiles could be fired very rapidly. All you had to do was whizz the ball quickly to one side, then bang the fire button as fast as possible. If you have a track-ball at home you can recreate this manoeuvre perfectly, but a quick-wristed mouse user should be able to emulate it with some reasonable success.

If you manage a decent score, the game will ask you to put an entry in the high score table, but be warned that unlike many high score tables this one is saved to disk. If you are still using the original coverdisk, BACK IT UP NOW!

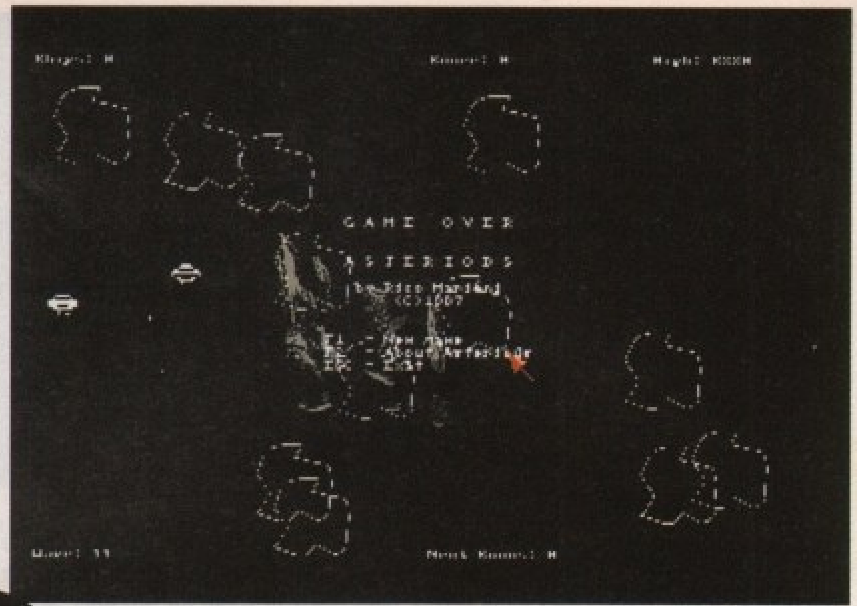
The advantage of this method is that you can save your all-time best scores on disk for as long as you like, and with the classic gameplay on offer, that could be a very long time!



The whizz-bang tactic at work



Looks like the end is nigh



Looks familiar?

Asteroids

Dozens of colours! Amazing animation! Stunning sound effects! These are all descriptions which don't, unfortunately, apply to Asteroids, yet it was a huge hit in the early days and is still a very playable game. Why?

As usual, the object of the game is to survive as long as possible against overwhelming odds. This was one of the most appealing features of most of the old classics. You always knew you were doomed – the challenge was to see who could last the longest.

You begin in the middle of a screenful of hulking asteroids and it's only a matter of time before your ship collides with one, leading to your instant demise. Luckily, your ship is armed with a laser and can manoeuvre around the screen using its thruster and left-right directional controls.

Be careful of the inertia effect faithfully reproduced here from the original. This means that when the ship is moving it tends to stay in motion until you turn round and apply reverse thrust.

When an asteroid is hit by laser fire it splits into two pieces travelling slightly faster than the parent. Shoot these and they split again into boulders which whizz about at even greater speeds and cause real headaches.

These boulders can be destroyed with a single shot, but there are often ➤

How to use The Disk

First of all, you must make a back-up copy of the coverdisk. To do this, boot up with your copy of Workbench, then double click on the Workbench disk icon, followed by the Shell or CLI icon. Now type:

DISKCOPY FROM DF0: TO DF0:

or, if you have an extra disk drive, put a blank, formatted disk in DF1: and type:

DISKCOPY FROM DF0: TO DF1:

Follow the onscreen prompts until the copying procedure has ended, then put your original disk away in a safe place. Now switch off the machine and wait for 30 seconds before re-booting with the copy. Wait until the CoverDisk17 icon appears, double click on it and away you go.

That's all you need do to make a straight copy of the entire disk. However, you may also want to to copy individual programs from your copy of the coverdisk to a separate disk. In this case ensure that you fully understand which related files need to go with it.

For example, all of the document files on the disk require that the text editor PPmore is in the current disk's C: directory. Therefore, if you copy the docs to a new disk you will also have to copy PPmore to the new C: directory before you can read them.

Some of the smaller docs will not have been crunched, so for these you need only change the tool types on the icon's info screen to reflect whichever text editor you do have on the new disk.

As a general rule, you should carefully read the documentation for any program you copy from disk to disk.

This can save a great deal of messing about and can help you avoid all those infuriating error messages!

too many of them to take care of before one of them gets you.

Just to make things a bit harder and more interesting, the asteroids are augmented by the odd flying saucer. These appear from the edges of the screen and follow an erratic flight path spitting out laser bolts as they go.

When the screen is already jam-packed with boulders and asteroids these little devils can make life annoyingly complicated, but when the screen is clear of all except a few last boulders, the player can lie in wait for UFOs and pick up a few bonus points. When they appear at this late stage they are pretty easy to take care of.



One last note for players of the original game – there is no screen wrap on this version. On the old game you could zip out the top of the screen to appear at the bottom, or exit stage left and come in again on the right of the screen. In Rico Mariani's game, players and asteroids bounce off the screen borders and go back the way they came. Now don't just sit there – get blasting!

PrefSet

Author: Chris Simpson

One of the annoying things about Workbench's preferences is that to change one aspect, say the printer driver, you have to open the preferences drawer, then the prefs program, then go to the screen you need, carry out the change and then click on Use.

It's even more of a drag if you want to switch quickly to a setting containing several changes. There's no fast way to do it unless you use a utility such as PrefSet.

Using PrefSet you can utilise a great many different preferences settings, because unlike the standard Workbench file containing preferences settings, which must be called "system-configuration" and are located in the DEVS: directory, PrefSet can load or save a file and call it anything it likes.

This means you can have a long list of preferences settings ready to load in when needed. The PrefSet drawer on the disk contains five example settings for you to play around with, named example one through to five. To use them, activate the CLI window left open at the bottom of the Workbench screen by clicking in it, then type:

```
CD SYS:UTILITIES/PREFSET
<RETURN>
PREFSET EXAMPLE1 <RETURN>
```

Nothing could be easier.

The attendant utility is PrefSave, which you use to save any prefs you have tinkered with in Preferences. To save a new set, go into the CLI window as before and type:

```
PREFSAVE EXAMPLE1
```

You can, of course, prefix the filename with the drive and directory of your choice.

IFF2PCXII

Author: John Shaw

Despite its daunting and vaguely hieroglyphic name, this is a friendly and very useful utility. IFF2PCX converts Amiga graphics in the standard IFF format to IBM PC graphics in the PCX format, which is a rough equivalent of IFF in that it is accepted by most PC paint and DTP packages.

The advantages of such a conversion process are obvious in that Amiga owners can now transfer their IFF files to a PC without having to buy expensive commercial conversion programs such as ASDG's Art Department Professional. IFF2PCX makes it easy for anyone with a standard 512K Amiga to carry out the conversion for free.

To begin, run the program from CLI by typing:

```
CD DF0:UTILITIES/IFF2PCX <RETURN>
IFF2PCXII <RETURN>
```

or double click on its icon. By opening the program from CLI, you can save quite a bit of memory, which is essential if you intend to convert a lot of graphics and hold them in memory.

Once the program is running, you are presented with four options. From top left, these are PICK IFF, PCXDIR, VIEW IFF, and CONVERT.

The first of these when clicked, brings up a requester using the PD library, req.library as found in the disk's LIBS: directory. Using the file requester the user chooses the file to be converted to PCX format.

A useful feature at this stage is the program's ability to accept a stack of IFF files if they are chosen using extended selection. This is done by holding down the shift button while clicking once on each file with the left mouse button, then on OK. For our purposes, move to the MachineCode directory of the coverdisk and choose the file called "piccy" then click on OK.

The second gadget, PCXDIR, simply tells the computer which directory to write the PCX file in once it has been converted. Choose RAM: from the list of devices on the right-hand side of the requesters as the "piccy" file is less than 20K and should fit easily in even a 512K Amiga. Now click on OK.

The VIEW IFF gadget gives the user the opportunity to view IFFs before choosing which one to convert, so we can skip over that one for now.

Click on the last gadget, CONVERT, to begin the conversion process. This will read in the IFF, convert it, and write it to the directory chosen with the PCXDIR gadget. The resulting file is about 10 per cent bigger than the original IFF and will be about twice as big once decompacted on the PC, but the memory overheads are negligible when compared say, to those involved in the conversion to Mac TIFF format.

The conversion takes proper care over MSdos file naming conventions, so it will automatically truncate any filename of more than eight characters and add the .PCX file extension. The user therefore has very little to worry about other than that there is enough disk space or memory available for the files to be converted.

The coverdisk's ramdisk should give you ample room to practise with small files, as even 512K Amiga owners will have 300K or so to play about with.

Please remember that this program is shareware, so if you mean to use it regularly, send a donation to the author at the address supplied in the documentation on the disk.

ASolveII

Author: Lennart Oscarsson

If you're about to start studying for your A levels or for a degree in maths, physics, or most sciences, ASolveII should be extremely useful. It is designed to plot a wide range of maths functions and represent them onscreen, and takes a lot of the work out of messing about with maths.

By simply typing in the function you would like to plot, and setting maximum and minimum values for X and Y, you can have an instant appreciation of how the function will look on paper. This is very useful to give you an idea of where the maxima and minima will occur, along with any points of inflection.

In addition, the position of the cursor is continually updated in the top right-hand corner of the screen, and its co-ordinates given in pure maths terms down to seven decimal points.

A dastardly plot!

If you want to know the exact cartesian co-ordinates of any point on the graph, you merely zoom in and place the cursor on your chosen point. The co-ordinates will be those displayed on the top right.

Stop! I hear the differential calculus fans shout. How can you plot a curve with an infinite number of points on a computer screen of a set resolution? How can you find an accurate point on the graph when your accuracy is determined by the size of your pixels?

The answer is the excellent zoom-in function. This allows you to zoom into the graph until you reach a sufficient pixel-to-the-decimal-point ratio. For instance, you could zoom in on a turning point until it became virtually a straight line, then plot its co-ordinates.

The zoom function allows you to choose the area to be blown up to full screen size by dragging a box around it with the mouse, so if you choose a very small area, you can zoom in extremely close.

Not as good as sitting down and working out the function for yourself, but if we did that for you we'd be cheating, wouldn't we?

A host of extras

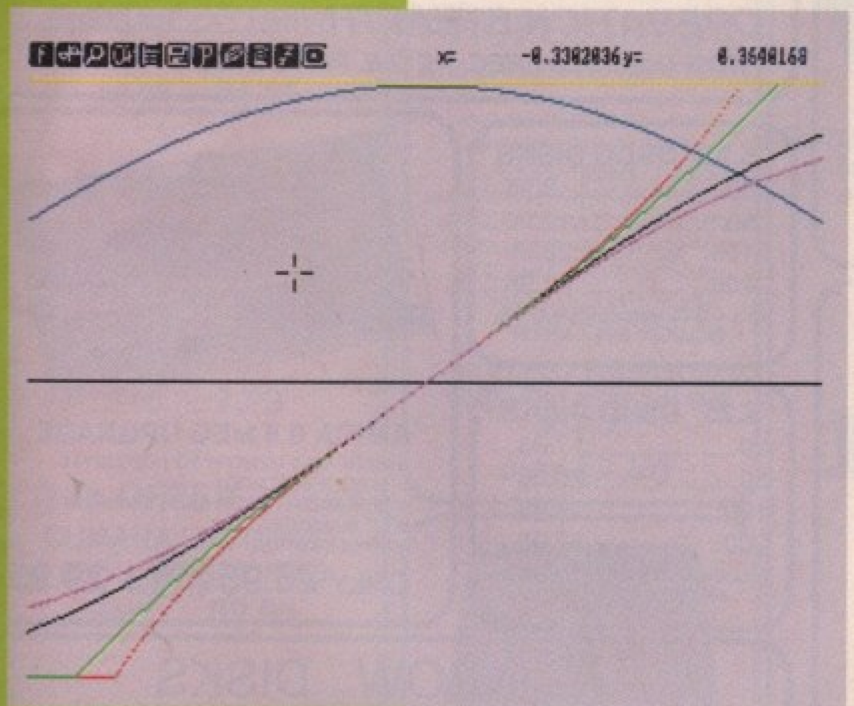
Extra features include the ability to plot up to six different functions on the same graph at any one time, plotting derivatives, second derivatives, integrals, and parameter functions, a calculator, and the option to save your graph to disk as an IFF for later output to printer or even a DTP package. If you're involved in the

numerate branch of education as either a student or teacher, ASolvell will become indispensible and one of your most useful mathematics tools.

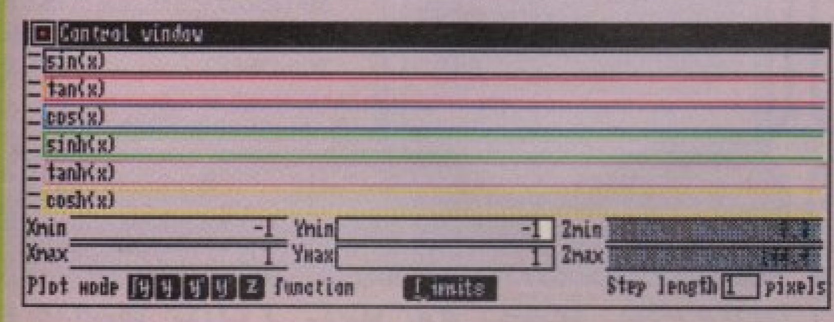
Maths functions

Here is a list of the maths operators you can use in ASolvell functions. The list should be comprehensive enough for most tastes:

+	addition
-	subtraction
*	multiplication
/	division
^	power function
SIN	sin function
COS	cosin function
TAN	tan function
ASIN	arc sin function
ACOS	arc cosin function
ATAN	arc tan function
SINH	sin hyperbolic function
COSH	cosinus hyperbolic function
TANH	tangens hyperbolic function
EXP	exponential function
LN	natural logarithm function
LOG	base 10 logarithm function
SQR	square root function
ABS	absolute value
INT	integer part



Plot up to six functions at once



A morass of mathematics!

Findex

Author: George Knight

Findex is an easy-to-use database program designed like an electronic card index. If you want a catalogue of programs, LPs or books, or if you have a business and wish to store staff or stock records, this is for you! Findex helps you to find what you want easily.

It operates on the basis of a two-dimensional array. Each item of data is regarded as an item belonging to a particular class, such as a program (item) on a disk (class).

The class is always stored and displayed in alphabetical order whereas each item is stored in order of entry. To find any item of data, you either find the class and then examine the items belonging to it or you use the search facility provided to find the item directly. You define display headings to suit your own needs.

How it works

The program opens to a largely blank window. Choose Open from the File menu and select the file Disks.fx, a small file created for demonstration purposes.

In the top box, you will see a list of disk titles. Click on any one of these and several lines will appear in the lower box giving the names of programs stored on the selected disk. Repeat as often as you wish to trawl through the disks.

If you want to find something quickly, choose Search from the Special menu and type a name into the string requester. The search is not case-sensitive, so don't worry about whether the entry is in upper or lower case.

If the search is successful and the search string is located, the item containing it will be highlighted in the lower box and the disk which has this item will be highlighted in the upper box. Choose Continue from the Special menu if you want to proceed with the search through the remaining items.

You will notice that there are keyboard equivalents for the menu items, so things can speed up a bit once you get used to playing about with Findex. As long as you remember the distinction between classes and items, it's easy to create your own database, as the on-disk documents contain a thorough tutorial section. If you get stuck try reading those, but you shouldn't have any real problems with Findex – it's friendly, simple and fast.

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Please allow 28 days for the delivery of your replacement disk.

Think you can do better? Want to be famous?

We are always on the lookout for new, quality Amiga programs for the coverdisk. If you think you have written something good enough for others to share and enjoy, please send it in and we'll have a look.

The *Amiga Computing* coverdisk is used by thousands of Amiga owners every month in places all over the world from New Zealand to the U.S.A, so if your submission finds its way onto the disk, you could be famous!

Please make sure you list ALL Workbench and other files necessary for the program to work. Feel free to design your own icons for progs which run from Workbench, but please don't make them too big.

If you ensure your program is as compatible as possible with a wide range of Amigas, it will also stand a better chance of publication. We are especially interested in programs designed to work with the A3000, although if they work only with the new machine they'll have to be quite small.

We are prepared to pay our current rates for original work which hasn't been distributed in any other way and which has not been put in the public domain.

If you wish your program to be released as shareware or freeware we will be happy to publish it, but would, of course, be happier if we'd been given it first!

Your submission MUST be accompanied by the submissions form, a copy of it, or a signed declaration to the same effect. Please supply your full name address and phone number.

Unfortunately we cannot undertake to return disks sent to us as the volume of submissions makes this an impractical exercise.

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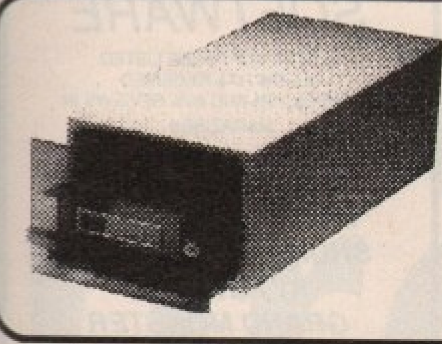
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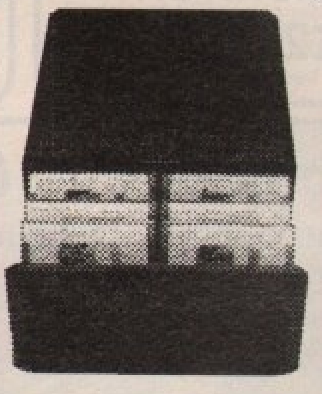
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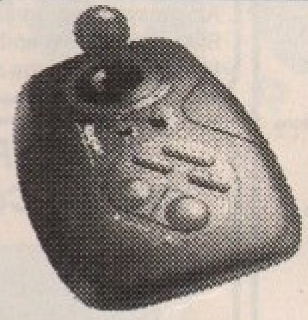
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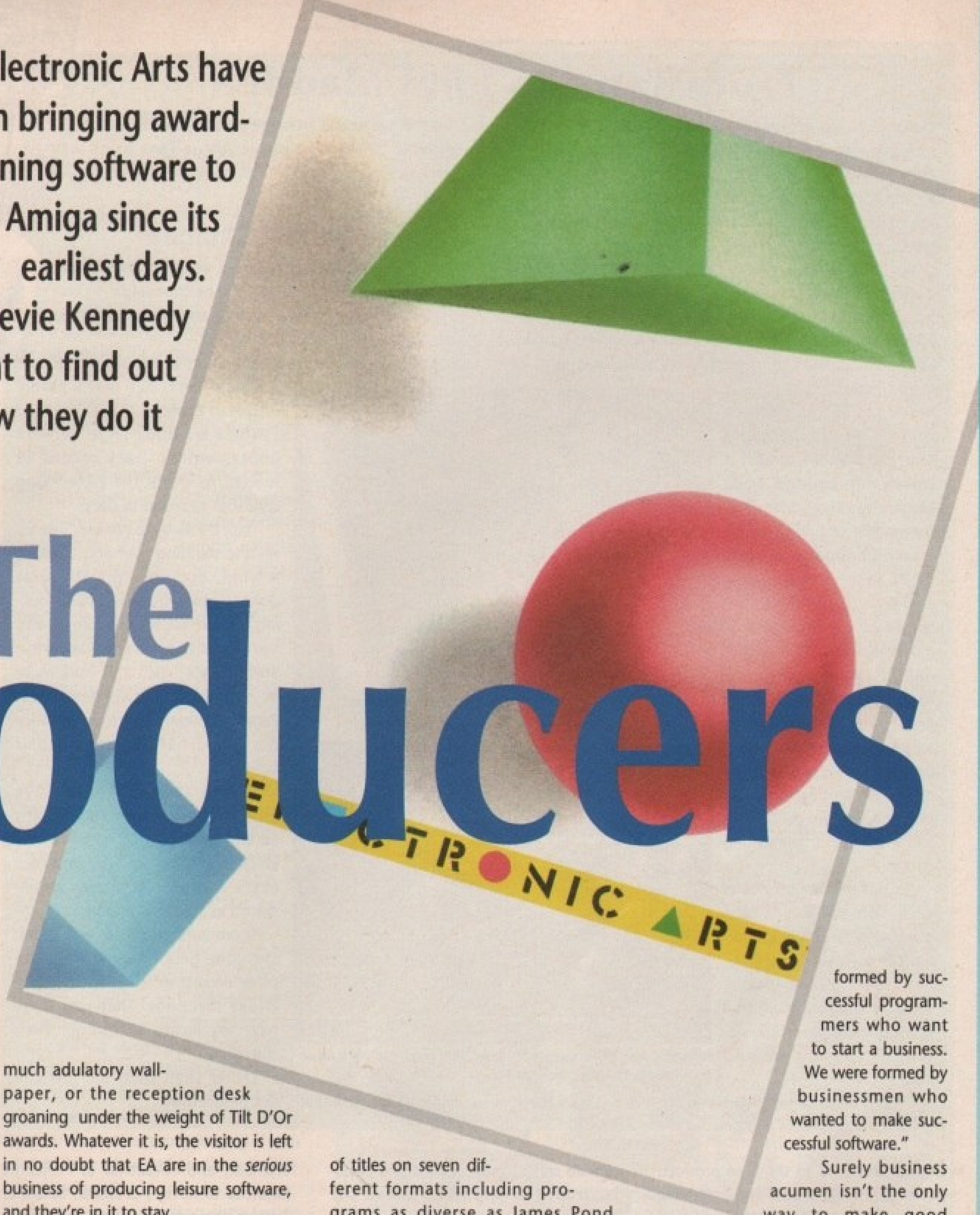


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Electronic Arts have been bringing award-winning software to the Amiga since its earliest days. Stevie Kennedy went to find out how they do it

The producers



Cramped smoke-filled offices in a back room over a Chinese laundry, filled with half-eaten Pot Noodles and long-haired ex-hippies dreaming of the ultimate game. Pink Floyd posters on every available surface, a few weather-beaten and thoroughly under-used filing cabinets, and perhaps the odd game in development – this is the traditional image of the average games software company. Electronic Arts could hardly be more different.

Maybe it's the ultra-modern headquarters building in the security conscious business park, or the obviously Californian-style open plan offices. Perhaps it's the award certificates plastering the reception area walls like so much adulatory wallpaper, or the reception desk groaning under the weight of Tilt D'Or awards. Whatever it is, the visitor is left in no doubt that EA are in the *serious* business of producing leisure software, and they're in it to stay.

As Sara Shrapnell, EA's effervescent PR co-ordinator, told me, "We're not just here to make a fast buck – we want to be here in fifty years' time."

To date, the European subsidiary has been here for only four years, but in that time they have released dozens of titles on seven different formats including programs as diverse as James Pond, Interceptor, and the all-conquering Deluxe Paint III. The sleek offices in Langley, Berkshire are now home to nearly 50 staff, and exude an aura of quiet confidence.

What, I wanted to know, was the secret behind EA's success?

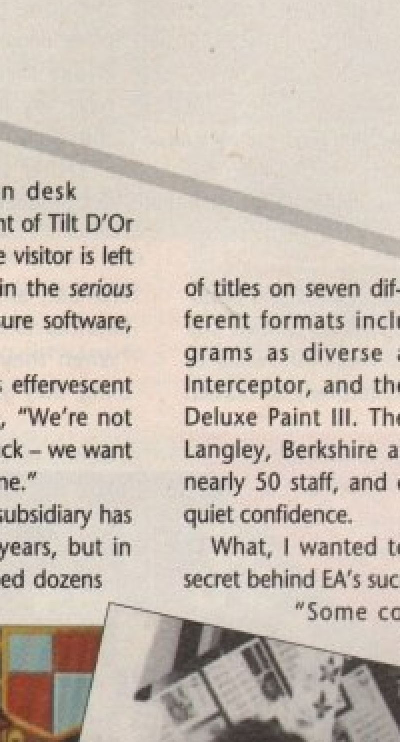
"Some companies," Sara told me, "are formed by successful programmers who want to start a business. We were formed by businessmen who wanted to make successful software."

Surely business acumen isn't the only way to make good games? Is EA *just* a business?

"No. We put a lot of effort into producing good games. Our Producer system allows us to adopt an entirely 'hands-on' approach."



Populous took the gaming world by storm and made Electronic Arts a name to reckon with



Electronic Arts effervescent PR co-ordinator Sara Shrapnell

Movie makers

Electronic Arts, I found, are very proud of what they call their Hollywood-inspired Producer system, adopted in an attempt to engender the "optimum environment" for software development.

The idea basically involves a producer (project manager by another name) whose job it is to take a game from the initial stages and oversee its production and development right up to packaging and marketing.

In this way, individual programmers and development teams code games out of house under the EA banner, liaising with producers who do their best to ➤

From Tanx to John Madden

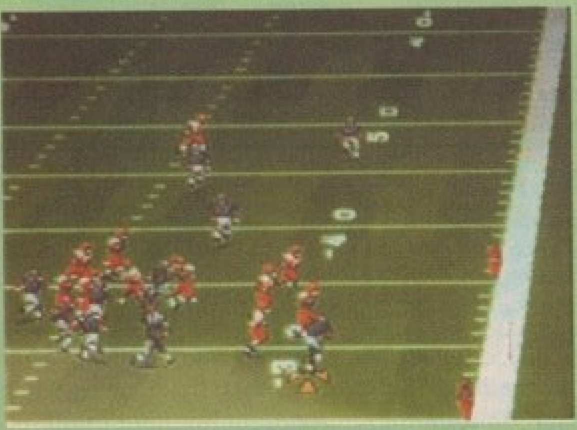
Our regular readers could not help but remember the feature game on our May coverdisk, Amiga-Tanx, written by Gary Roberts. The same Gary Roberts now spends his days in a cube at Electronic Arts which he shares with Stefan Walker, the other half of EA's relatively new in-house programming team.

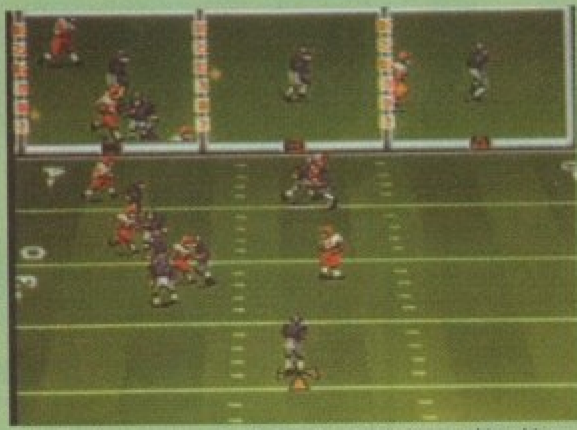
For years EA have relied on outside authors and coders to develop and convert the games they market, but in a recent move to promote flexibility and ensure titles appear on as many formats as possible, the in-house team was formed to carry out the work of converting successful games to new machine formats.

Gary is at this moment working on John Madden's American Football, already a smash hit on the Sega Megadrive, and Stefan is in the middle of bringing LHX Attack Chopper over from the PC to the Amiga.

Gary's route into the games software business was more conventional than traditional. After college and the almost compulsory three A levels, he went to IBM for a year on a work experience placing. While working on one of Big Blue's multimedia projects, however, he still hankered after a job writing games.

To this end, he set out to code Amiga-Tanx and a mammoth six-disk one-hour-long Pink Floyd demo (now available in the public domain) and sent them to a number of software companies. The results weren't long in coming.





John Madden's American Football looks set to become as big a hit on the Amiga as it was on the Sega. Look out for it at Christmas

"You'd be surprised", Sara told me, "at just how much of the stuff we receive from programmers is instantly forgettable. When we saw the Amiga-Tanx game we reached for the phone".

Artistic Choices

Gary, meanwhile, had received an offer from another large software house. So why did he choose EA?

"Everyone here was so friendly, and when I came to see the company I just thought 'wow!'"

Electronic Arts have a reputation which attracts good programmers, but that's hardly unique to them.

There are other large software houses with a track record to match, so was it the EA working style that appealed to Gary?

"Yes, it's all quite relaxed. There's no-one standing over you cracking a whip, but the work still gets done. Coming from IBM I was looking for somewhere less formal, and here you can turn up wearing anything you want and work more or less to your own deadlines. People sometimes turn up in fancy dress and have discos in their cubes!"

What's the most productive aspect of your weekly routine? It's all very well coming to work in a chicken suit, but is there an aspect of the work you could put your finger on as especially important?

"Communications are very good. Everyone gets to know what the other departments are up to at our Friday meetings. That way if we have any moans we can get them sorted out.

Other than that, it's just the atmosphere here that's very productive".



Gary Roberts who steadfastly refused to do something silly for the camera

smooth the road to the final product. Kevin Shrapnell, whose projects have included Imperium and Hound of Shadows told me, "We phone all our artists every week, even if there's nothing specific to talk about. You end up consoling programmers whose girlfriends have left them! It all helps."

The system, for all its "people management" overtones, seems to work admirably and shows how the leisure software industry can be as businesslike as any other. The company's policy of creating the right atmosphere and then allowing development to take place almost at its own pace encourages a relaxed and informal office and is popular from the point of view of the authors as well. Marc Dawson at Mandarin software, formerly of Eldritch The Cat, and co-author of Projectile (another of Kevin's projects) told me, "When they decide they like something, they go away and sort out all the red tape, then you sign a contract and they take care of you."

So the system works?

"Yes. They're definitely the best people to work with from the author's viewpoint. Kevin looked after everything for Eldritch."

And do you think this is what produces good games? Isn't it true to say that games such as Bullfrog's Populous can land on EA's lap as a *fait accompli?*

"True to a point, but EA can spot a game's potential, and with their reputation they attract good software teams."

Talent hunters

Bullfrog are a prime example of the sort of team whose work finds the light of day under the EA flag. Populous was one of the most original games to appear on the Amiga, and it was only after one software company turned it down that EA's Joss Ellis said "yes".

Bullfrog's Peter Molyneux told me he had originally approached EA "when it was a flat in Bayswater" with a database program which EA turned down. Bullfrog then developed the shoot-'em-up, Fusion, and a fledgling demo version of Populous.

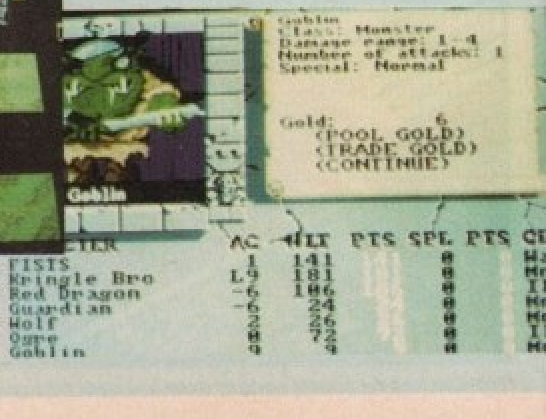
TelecomSoft turned them down, but EA saw the potential offered by Populous and one of the most successful partnerships of the last couple of years was born.

"The game (Populous) was really

> *We're not just here to make a fast buck – we want to be here in fifty years' time*

EA roll of honour





Battle Chess and the Bard's Tale series – typical of EA's early successes in that they're unusual and a far cry from arcade shoot'-em-ups

Here's a quick rundown of the releases Electronic Arts would like to remember with affection, and a few they would not! All scores in parenthesis are as awarded by *Amiga Computing's* reviewers at the time.

1987 – Deluxe Paint released in Europe and makes EA a name in Amiga software. The company, just launched as a

nothing more than a demo when we showed it to Electronic Arts, and we had about six month's work to put in on it, but they liked it straight away."

What was your overriding impression of the EA way of doing things? Is there one word that sums them up?

"Professionalism", Peter told me. "They have faults too, of course, the main one being the way their decisions can be driven by the parent company in the States."

And do they, in your opinion, have one secret to help produce quality games?

"Their quality control is very tight. It can be incredibly frustrating for programmers to have a game returned to them for the smallest of changes, but EA's thoroughness pays off in the end.

"They're also quite flexible. The knights facility in Populous became one of the most important aspects of gameplay, but it was only included a week before the original deadline for the program.

"We convinced EA that it was an important feature and they agreed to its inclusion, even though they had to delay things by three weeks as a result."

Cubes and QA

Electronic Arts' most thorough games testing takes place in what is called a "cube" – everyone at EA works in a "cube" of an open plan office – filled with games software and computers. There the customer services lads are locked for a week at a time to play games eight hours a day.

If that sounds like fun, stop and think again. The CS people have a brief to play every game to exhaustion, and to the bitter end. Every move is recorded on VCR so that if a bug should arise, it can be played back for the coders to see for themselves what's gone wrong.

"Customer services have a vested interest in finding every bug", Sara told me, "because if there's anything wrong with a game it's them who have to take the calls from irate customers. They also get to know the games very well, and so can help with any queries, better sometimes even than the programmers."

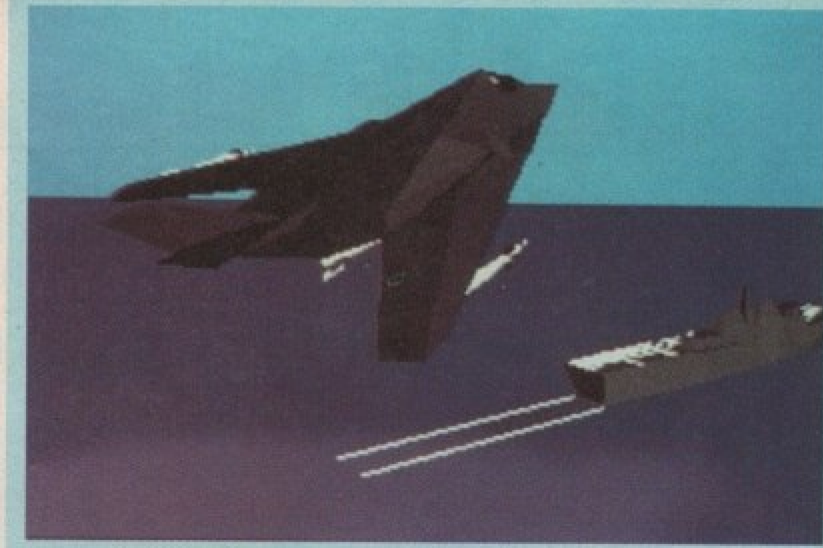
> *'When I came to see the company I just thought WOW!'*

After all the marketing and production has taken place, the documentation with its six language translations dotted to the last "i", and the advertising splash planned, a game's release date and final form are determined by a trio of joystick-wielding game players. As a last stage of development, the advantages of having a game tested to destruction by critical gamers should be obvious.

In the final analysis it's the game players who count, and even if you level the obvious criticism that EA is the corporate face of games software, and an acute departure from the sort of companies which brought us many of the older classics, you'd still have to agree they produce games that game players like to play.

They've had their turkeys, of course, and the policy of taking on a certain number of odd or very different game projects has led EA into more than one flop. With a long list of smash hits, however, and a development process favoured by the accountants and coders alike, you'd have to be a few sprites short of a shoot-'em-up if you didn't think EA would continue to produce the goods.

I for one am looking forward to Populous 2.



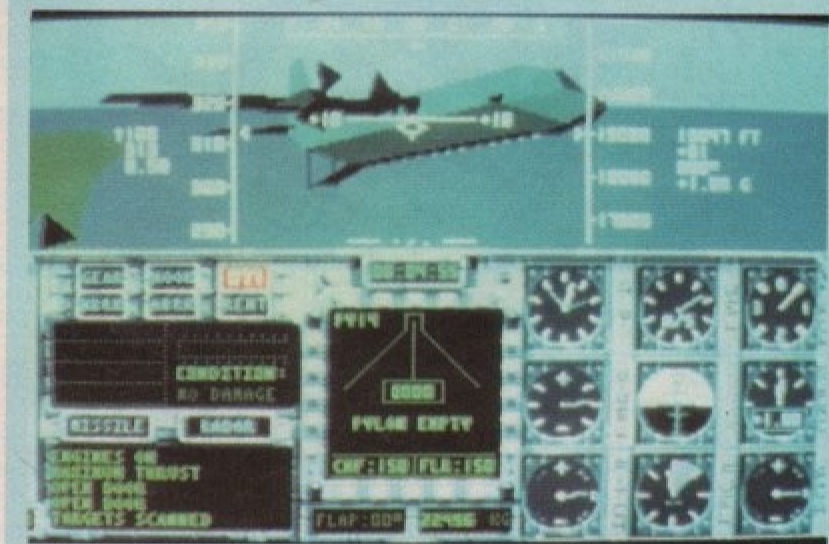
Birds of Prey

Electronic Arts, as has been pointed out, have the reputation to attract top games writers and development teams, and this is the case with their next most awaited release, the flight simulator Birds of Prey.

Coded by Starglider author Jez San and Argonaut Software, the game will be released "later this year" and we have been reliably informed that it will feature no fewer than 40 different combat aircraft. Realistic flight performance is promised, as is a high degree of realism both in the air and on the ground.

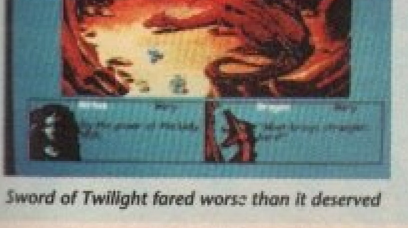
Son of Starglider?

With Argonaut's past history, Birds Of Prey is likely to feature at the least a lot of smooth 3D action, but whether they can combine this with realism is something you'll have to watch our game zone to find out.



subsidiary of the giant American Electronic Arts, begins small but with a bang.

1988 – Bard's Tale (84%) and F/A-18 Interceptor (96%) become smash hits and the latter is bundled with A500s. Other hits include Fusion (73%), Battle Chess (77%). Flops include Ferrari Formula 1 and Earl Weaver's Baseball. EA now established as a name in the games market as well as productivity.



Sword of Twilight fared worse than it deserved

1989 – DPaint III launched to critical acclaim. The punters go wild for its Anim facility and a bouyant EA successfully completes their first issue of shares to the public. Populous (87%) attracts rave reviews. Other hits: Powerdrome (82%) and Zany Golf (90% – though the punters didn't agree totally with our reviewer!). Flops include Reach For the Stars and Swords of Twilight.

1990 – Though launched too late for the year, Powermonger becomes the most awaited game of 1991. The EA/Bullfrog combination is proving a huge success. Other hits: 688 Attack Sub (82%), Neuromancer (80%). Flops include Keef The Thief and Hound of Shadow.

1991 – Powermonger finally launched and is as good as promised. The game is smothered in awards. Other hits include PGA Tour Golf (75%) and Centurion (reviewed this issue). Bard's Tale 3 is a surprising disappointment – the RPG genre has overtaken the series' old-fashioned style of gameplay.

Releases to look forward to include John Madden's American Football, LHX Attack Chopper, Zone Warrior, and Jez San's (of Starglider fame) Birds of Prey.



Zone Warrior will be a slash-'em-up and a departure from EA's usual strategy games

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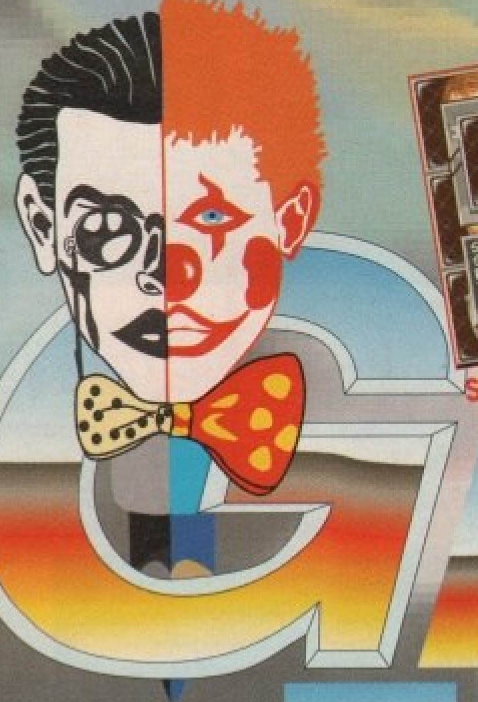
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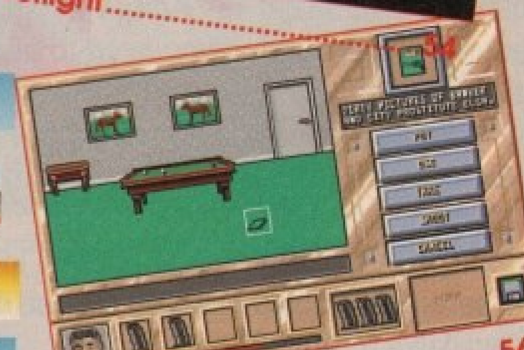




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1	Eye of the Beholder	US Gold	£30.99	11	Treasure Island Dizzy	Code Masters	£4.99
2	Monkey Island	US Gold	£29.99	12	Miami Chase	Code Masters	£7.99
3	Fantasy World Dizzy	Code Masters	£9.99	13	North and South	Digital Integration	£7.99
4	Kick Off - Winning Tactics	Anco	£12.99	14	Toki	Ocean	£24.99
5	PGA Tour Golf	Electronic Arts	£25.99	15	Railroad Tycoon	Microprose	£34.99
6	Lombard RAC Rally	Hit Squad	£7.99	16	Little Puff	Code Masters	£6.99
7	Hero Quest	Gremlin Graphics	£25.99	17	Xenon 2	Mirror Image	£9.99
8	Defender of the Crown	Mirror Image	£9.99	18	Armour-Geddon	Pysgnosis	£25.99
9	Lemmings	Psygnosis	£24.97	19	Carrier Command	Mirror Image	£9.99
10	3D Pool	Mirror Image	£9.99	20	Speed Ball 2	Mirrorsoft	£24.99

This chart is compiled by Gallup Ltd

tip SHOP Activate cheat mode by hitting Page 64

Are you confused by CLI?
Baffled by backups?
Frustrated by files?
Now your problems are over.

The WORKSTATION is here!

It's no secret that the Amiga is the most powerful home computer of them all. What has remained a mystery for most newcomers is how to make the most of its immense potential. Now **Amiga Computing** has produced a floppy disk that is packed with everything you need to take the hassle out of harnessing the inbuilt power of your Amiga.

Many months of research and testing have resulted in a **simple-to-use**, single disk replacement for Commodore's Workbench which we're calling The WorkStation.

This indispensable collection of utilities, including some outstanding shareware never before assembled together on one disk, is now available for just £3.50.

It's too good to miss!

Got a faulty floppy? When vital disks get damaged, you'll now have the chance to try the seemingly impossible mission of recovering all your work. Workbench's geriatric DiskDoctor can be sent into retirement by this super utility!

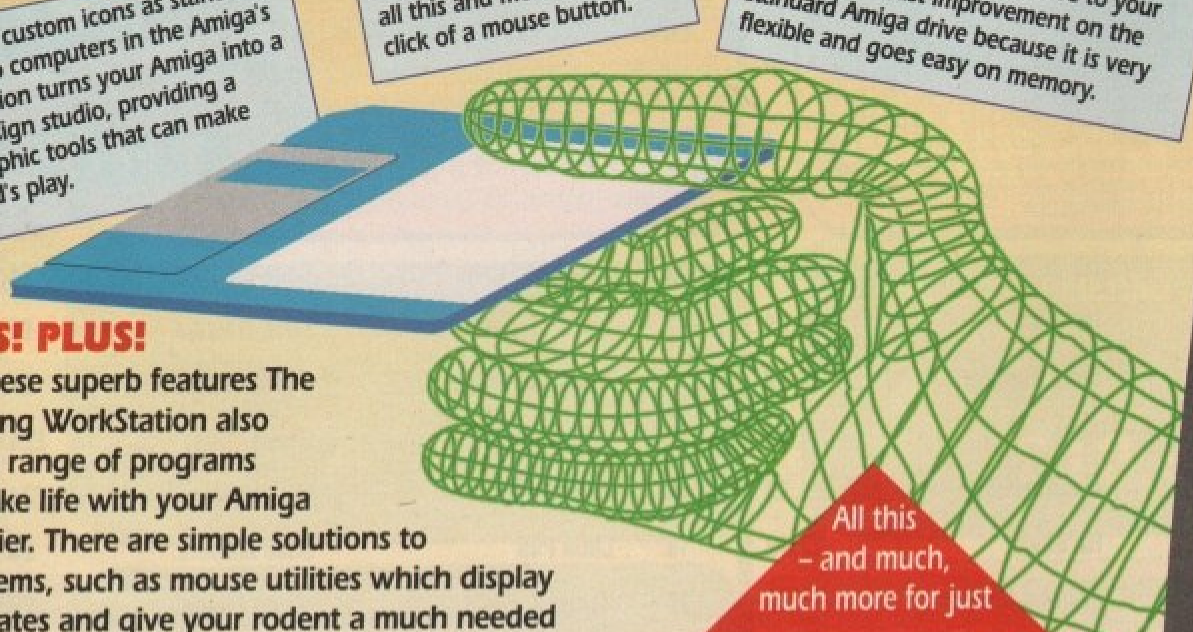
Heart of The WorkStation is a powerful shareware package called SID. When you use it you can say goodbye to faceless blank screens and complex commands. Instead your mouse takes full control. Fiddle with files, display text and graphics, sample sounds, uncrunch archives... all this and more with just a click of a mouse button.

Aspiring artists: Here's the package you've been waiting for! Using nothing more than your trusty mouse you can now freeze and store any Amiga screen that runs under Workbench. Grab screens from your favourite PD game and "edit" those high scores using any popular paint package.

Putting print to paper? The WorkStation disk includes a superb text editor. This powerful package has an unashamedly no-frills approach to producing and formatting professional looking text that would be envied by many of the more expensive commercial products.

The WorkStation has a fully configured dynamic recoverable ram drive which acts like an extra invisible drive to your Amiga. It's a vast improvement on the standard Amiga drive because it is very flexible and goes easy on memory.

The ability to design custom icons as standard is virtually unique to computers in the Amiga's class. The WorkStation turns your Amiga into a comprehensive design studio, providing a wide range of graphic tools that can make icon creation child's play.



PLUS! PLUS! PLUS!

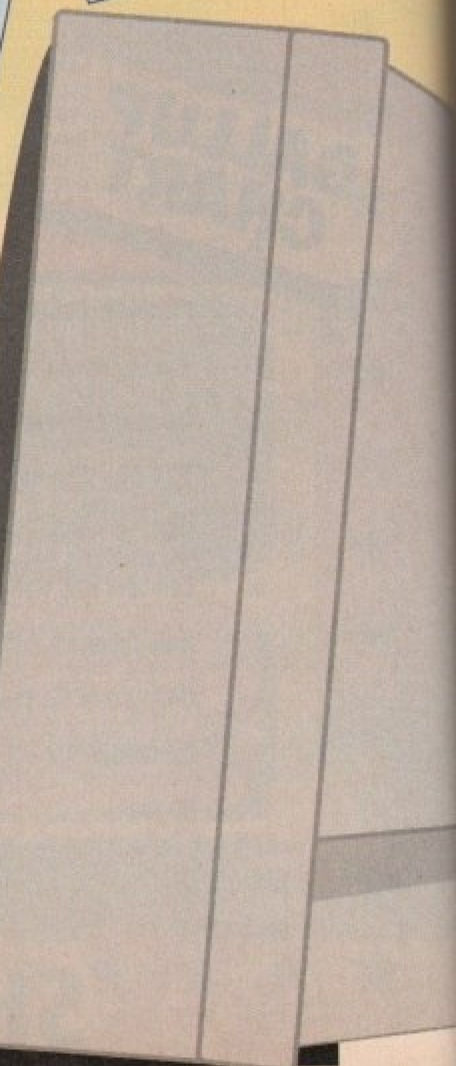
As well as all these superb features The Amiga Computing WorkStation also includes a wide range of programs designed to make life with your Amiga a whole lot easier. There are simple solutions to everyday problems, such as mouse utilities which display screen co-ordinates and give your rodent a much needed speed boost.

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PREVIEWS

Jason Holborn spills the beans on the latest offerings from the Amiga games scene

PEGASUS – *Gremlin*



After milking the race game genre a tad, the lads at Gremlin have gone back to the days of ancient Greek mythology for their latest offering, Pegasus. Set in the days of monsters and magic, Satan (the baddy) has shattered the magic crystals which hold the souls of the incarnations of six planes of existence. Satan now has ultimate rule over the planes and the mortal world.

You play the famous Perseus. With your friend and flying companion the Pegasus, you must thwart Satan's evil plan by collecting all the fragments of the crystals, bringing them together so that the incarnations can function once more.

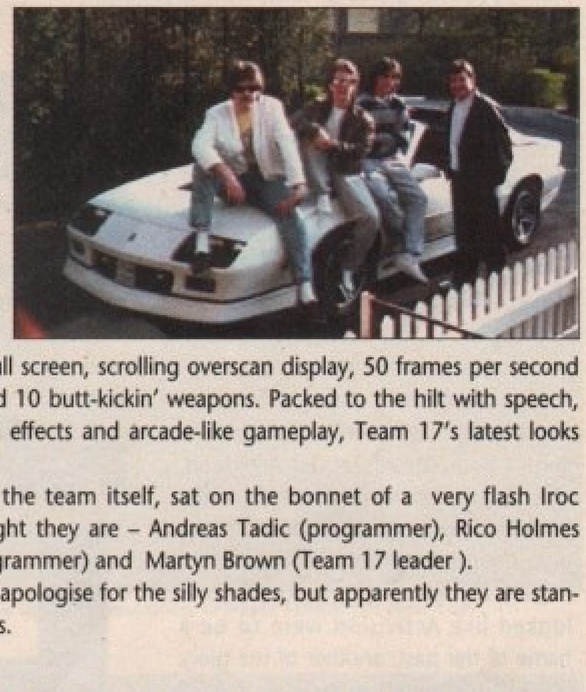
BEAST BUSTERS – *Activision*

Fans of the gory Operation Wolf-like shoot-'em-up Beast Busters will be pleased to hear that Activision have snapped up the rights to convert it to the Amiga. You must frantically blast through seven levels of Zombie-infested screens ranging from the Subway section on level one, to the final confrontation with the mad scientist on level seven.



In true Operation Wolf style, two players can blast away simultaneously at the Zombies which will attack you relentlessly.

PROJECT X – *Team 17*



Team 17 are a busy lot. With their first release, Full Contact, doing very nicely thank you and Alien Breed now only a matter of days away, the team are already hard at work on their latest project, a very flash looking (but yet unnamed) 1 Mb only shoot-'em-up.

The game features a full screen, scrolling overscan display, 50 frames per second animation, 32 colours and 10 butt-kickin' weapons. Packed to the hilt with speech, fabulous graphics, special effects and arcade-like gameplay, Team 17's latest looks set to be a real scorcher!

Above is a picture of the team itself, sat on the bonnet of a very flash Iroc sportscar. From left to right they are – Andreas Tadic (programmer), Rico Holmes (artist), Peter Tuleby (programmer) and Martyn Brown (Team 17 leader).

Team 17 would like to apologise for the silly shades, but apparently they are standard issue in such PR shots.

THE GATEWAY TO THE SAVAGE FRONTIER – *SSI/US Gold*



If you're after a decent role-playing game, then there's no better label to look for than that of SSI, the US-based company that brought such classics as the Pool of Radiance series to the Amiga.

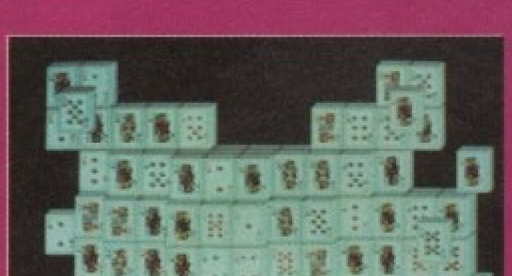
Gateway to the Savage Frontier begins a new era of role-playing adventure in the Forgotten Realms. Starting in the town of Yartar, you must venture through a large area of wilderness on a quest to gather four magical statuettes.

With these items of magical power, you can stop the advance of evil across the previously impassable Great Desert of Anaurach.

SHANGHAI II: DRAGON'S EYE – *Activision*

The original Shanghai was a real corker of a game and Activision hope to achieve similar success with the launch of the sequel which is due some time in September.

The game builds on everything that made the original such a playable game, but adds even greater challenges to bring the game right up to date. It uses 12 different layouts taken from the Chinese calendar in the shape of the rabbit, ram (ram with horns, not expansion ram!), snake, ox, rooster and more.

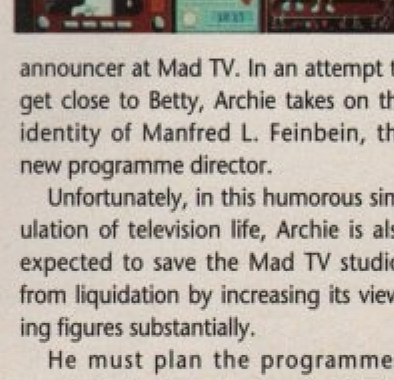


After you've successfully cleared all the tiles, you're rewarded with an animated picture of the animal. Pretty good, huh?

And when you have successfully mastered all the levels, you earn the right to take on the challenge of the Dragon's Eye...

MAD TV – *Rainbow Arts*

Falling in love is all very nice, but it can also get you into an awful lot of trouble. Take young Archie for example. He's fallen in love with Betty Botterblom, the attractive television



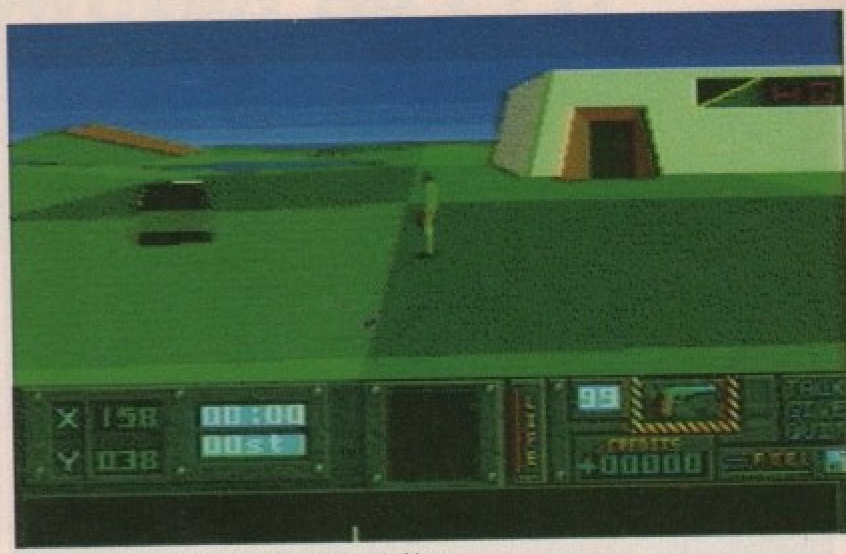
announcer at Mad TV. In an attempt to get close to Betty, Archie takes on the identity of Manfred L. Feinbein, the new programme director.

Unfortunately, in this humorous simulation of television life, Archie is also expected to save the Mad TV studios from liquidation by increasing its viewing figures substantially.

He must plan the programmes, search for the hottest news and finalize contracts for TV spots to get extra revenue, but also not forget Betty – she needs lots of devoted attention to keep her interested.



I wandered lonely as a cloud, or something like that. Anyway there's no time for sightseeing – there's a war on you know



Ahh, nice of HQ to lay on transport like this. Nothing like nicking the General's car to get you in a good mood

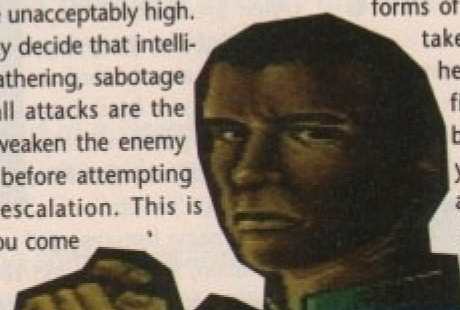
When you hear that a dictator backed by a huge army has invaded a small territory you may start to think, uh oh, they didn't take long to make a game out of that! Indeed, it does sound very similar to what a certain person did to a certain country not so long ago.

But before the accusations begin about cashing in, let me say that Hunter was formulated way before anything happened out in the Gulf. Hunter comes from the revamped Activision. This month sees them staging a comeback the likes of which would make even George Foreman think twice.

Just a matter of months ago it looked like Activision were to be a name of the past, another of the glory boys who couldn't quite hack it. Well just to prove everybody wrong, they've returned. With The Disk Company in France at the helm, Activision are back in business and out to impress.

In Hunter, a small but strategically important group of islands has been invaded by an army of some considerable strength. Your commanders do not want to risk a full-scale military counter-attack just yet as the casualties would be unacceptably high.

So they decide that intelligence gathering, sabotage and small attacks are the way to weaken the enemy enough before attempting further escalation. This is where you come in. You are one of a new breed of soldier, trained in undercover work and all forms of combat. Chosen to undertake the missions deep in the heart of enemy territory, you find yourself working alone behind enemy lines where you have to keep your wits about you just to survive, let alone complete your mission and make it back home.



Before you start each mission you are given a briefing by your superiors in which they tell you what you have to do and how long you have to do it.

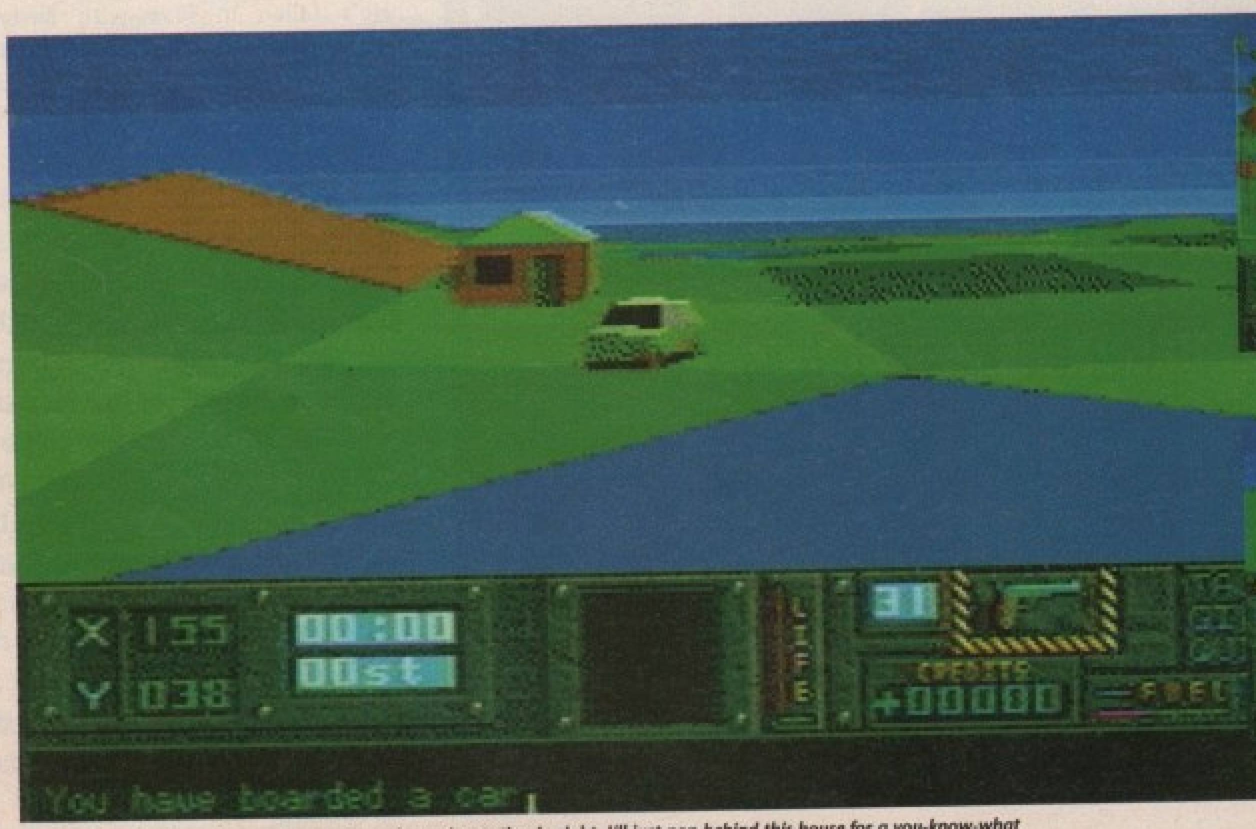
This ranges from a couple of hours to a couple of days – not real time I might add. After that you'll have to pop off to the stores to fill up your kitbag and away you go.

One of the things which makes Hunter so damn addictive is that

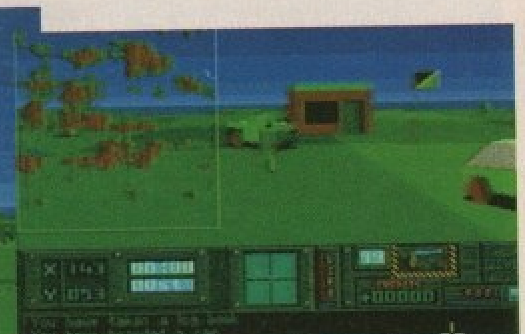
Stand by to be hunted down

HUNTER

Publisher: **Activision** Price: **£29.95** Release date: **Late August**



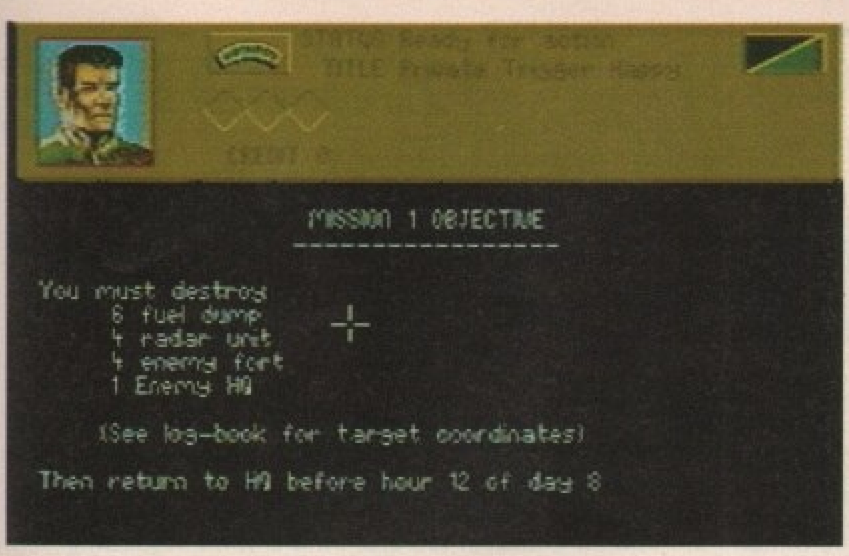
A lonely drive in the country and not a Granada service station in sight. I'll just pop behind this house for a you-know-what



A map! Now that'll be handy. I wonder if they'll mind if I borrow that armoured car?



Coo, I can fit loads more in my kit bag and the thing weighs a ton already. Can anyone see a porter anywhere?



Ah a doddle! Eight days to cause this much carnage – no problem



Part of your specialist training was obviously in house-breaking, and this time it reaps rewards

regardless of which mission you are on there are no restrictions, apart from time, over how you do it. You can use whatever transport or equipment you like. This sense of freedom allows exploration and experimentation over transport and equipment mixes.

For example a typical mission could go like this. Exit briefing and go to stores. Fill up kitbag and grab ammo. Jump in the car and head to the church. Nick the vicar's bike and go to the boat. Sail over to the next island and jump in the helicopter.

Then fly over to enemy territory. Land and raid some enemy buildings. Wear an enemy uniform and start talking to enemy soldiers. Nick an enemy's car and run him over. Then find your mission objective, blow it up and still be home in time for tea and Neighbours.

Or it could be completely different – that's the beauty of Hunter, so long as it's within the time limit anything goes. There are heaps of different modes of transport but each has its own problems – just try controlling the helicopter when it's at maximum thrust!

On completion of a mission you are awarded a bounty for your efforts – but if you don't like chocolate they'll give you money instead.

Hunter is very addictive with tons of missions, each requiring different skills and each like a game on its own. Try the last mission where you have to assassinate the enemy leader and bring back his head – great fun.

You can do the job quickly and wander about the islands for a while sightseeing. Everything you do has a knock-on effect. If, for example, you blow a radar tower in one mission it won't be able to detect you on any later missions and any soldiers you take out stay dead.

The graphics are 16-colour solid 3D with the game viewed from an independent perspective, and the controls are easy to master.

If this is what we can expect from Activision in the future then it looks like they're back with a vengeance. Just watch this one zoom up the charts when it's released at the end of August.

Fred Reagan

Graphics

The limited use of colour doesn't detract from the game in any way, in fact it adds to the atmosphere, especially at night. The different vehicles are wonderfully drawn and look really good when in use.

Sound

The game is let down badly by the sound. There is no in-game music at all, so you have nothing to listen to on those long walks with no transport. The effects are limited to a few different blasts and some engine noises.

Gameplay

Hunter is in a class of its own as far as gameplay goes. Loads of missions ranging from dead easy to outrageously tough. With so many variations possible no two games need be alike. If you buy no other game this month, buy Hunter.

FINAL JUDGEMENT

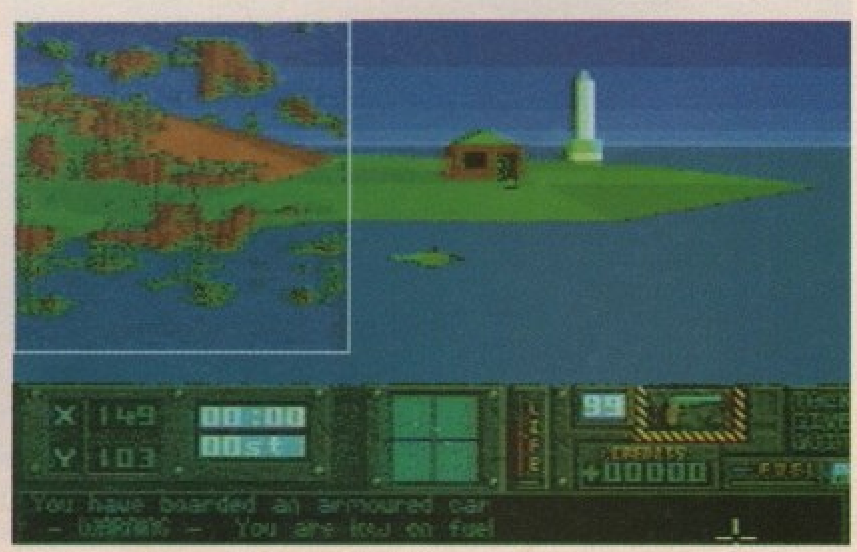
90



That monument must need some close-up examination, or maybe I should just blow it up?



The vehicles have a nasty habit of running out of fuel so make sure you raid a dump somewhere for some more



Just popping into the sea for a dip. No pollution problems here, but watch out for sharks

The mere mention of a puzzle-style game usually has arcade freaks turning to the next page. If there are no aliens to blast or end-of-level guardians to wipe out and no death and destruction to deliver, they just aren't interested.

All that could be about to change with the release of Logical from Rainbow Arts, the team who brought you Curse of Ra – remember? This new game requires a combination of fast reactions and a little brain power and should appeal to just about everyone, even little Johnny next door who is obsessed with playing John Madden's Football on his Mega drive.

The basic concept, as with all the best puzzle games, is very simple and can be picked up in minutes. All you have to do is manoeuvre the marbles through the various receptacles until you have filled each one with four balls of the same colour.

Sounds simple so far doesn't it? Well there's a bit more to it than that. The receptacles are connected by channels all over the screen along which you can pass the marbles. Each one can be rotated through 90 degree angles so that marbles can be collected and despatched through the channels. And just to make things a little more difficult, it is timed.

Still sounds simple? Well that's all there is to the first few levels, but just when you're getting used to it and thinking you're really hot a few elements are thrown in to make you stop in your tracks.

Little things like colour stoppers that will only allow marbles of a certain colour through and colour changers that will let any marble through but change its hue on the way.

And how about the traffic lights which mean that you have to fill the receptacles in a certain order before you can progress with the game?

If all that isn't enough there are also one-way channels and colour handicaps and forecasts to contend with, but if I told you about everything it wouldn't be any fun would it? There are 99 levels to play through and a password system has been included so that you can avoid all those easy levels you have done before. And believe me, when you get up to the higher levels you will need all of your time to concentrate on those tricky traps instead of messing about with the easy stuff.

When you have completed all 99 levels (some chance!) you receive a password that enables you to enter the level construction kit where you can devise your own devious levels. You can save your creations on disk to amaze and confuse your friends with later.

Logical may have you bashing your mouse in frustration but it will also have you coming back for more – a lot more!

Fred Reagan

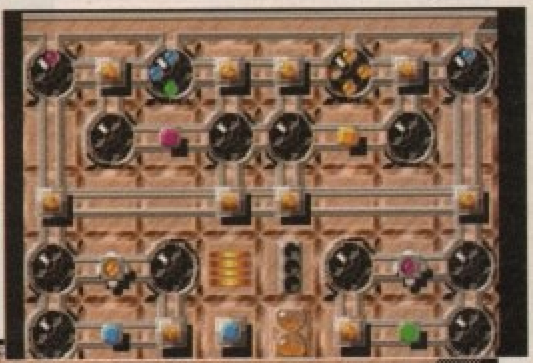
FINAL JUDGEMENT

80%

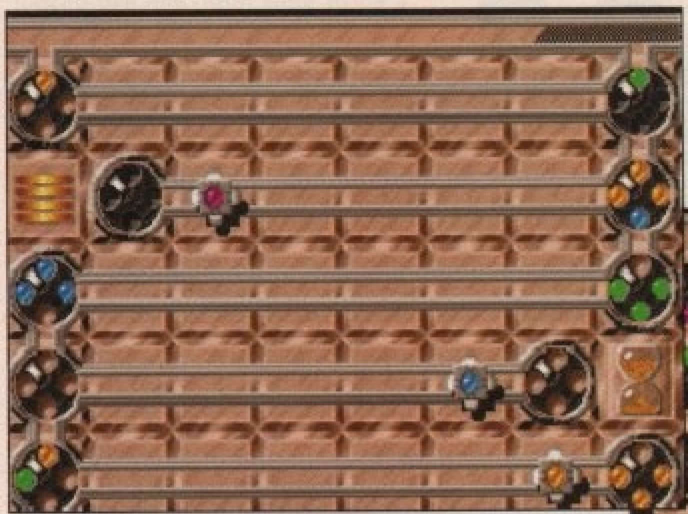
Now it's time to lose your marbles

LOGICAL

Publisher: **Rainbow Arts** Price: **£19.99**



The next ball to come onscreen is blue. If it was yellow you would be able to finish this level. The indicator at the bottom centre of the screen shows what's coming next



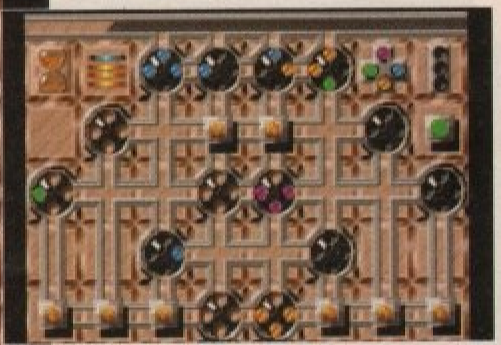
For some reason on this level the balls seem to be flowing exactly in the right order, but be assured that normal service will be resumed shortly and then you won't feel so sure!



This level has more elements than most, the colour receptacle in the middle needs to be copied in an empty receptacle to enable any progress to be made



As each level wears on there is less room to manoeuvre and the action soon becomes mind-blowingly complex. This level shows the one-way channels at the bottom right and the transporters



You're almost out of time on this level and judging by the state of the screen it's probably just as well 'cause you're in a bit of a mess aren't you?

Graphics

The onscreen presentation is very good and sports very clear graphics so that you know exactly what is going on – most of the time. There are four different sets of background graphics to choose from, which adds some variety.

Sound

The effects used throughout the game are quite neat but not exactly what you would call mind blowing. There is some title music, but again, nothing to rave about.

Gameplay

Very easy to get into with the early levels serving as an introduction to the many features of the game. One poor response from your mouse and you will start bashing it about in frustration as you miss that last marble by a whisker. You'll find yourself coming back to try and suss that last level many times.

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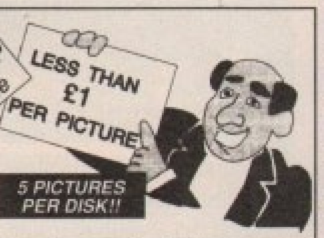
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G791 Te Evil Dead
G785 Star Trek - The Next Generation
G729 Star Trek - The Final Frontier
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G794 Collosal Adventure - World Adventure
G715 Pipeline
G761 Battleforce
G730 Frantic Freddie
G751 Arcadia
G777 Holy Grail Adventure
G732 Golden Fleece
G720 Grave Wars
G782 Dynamite Dick
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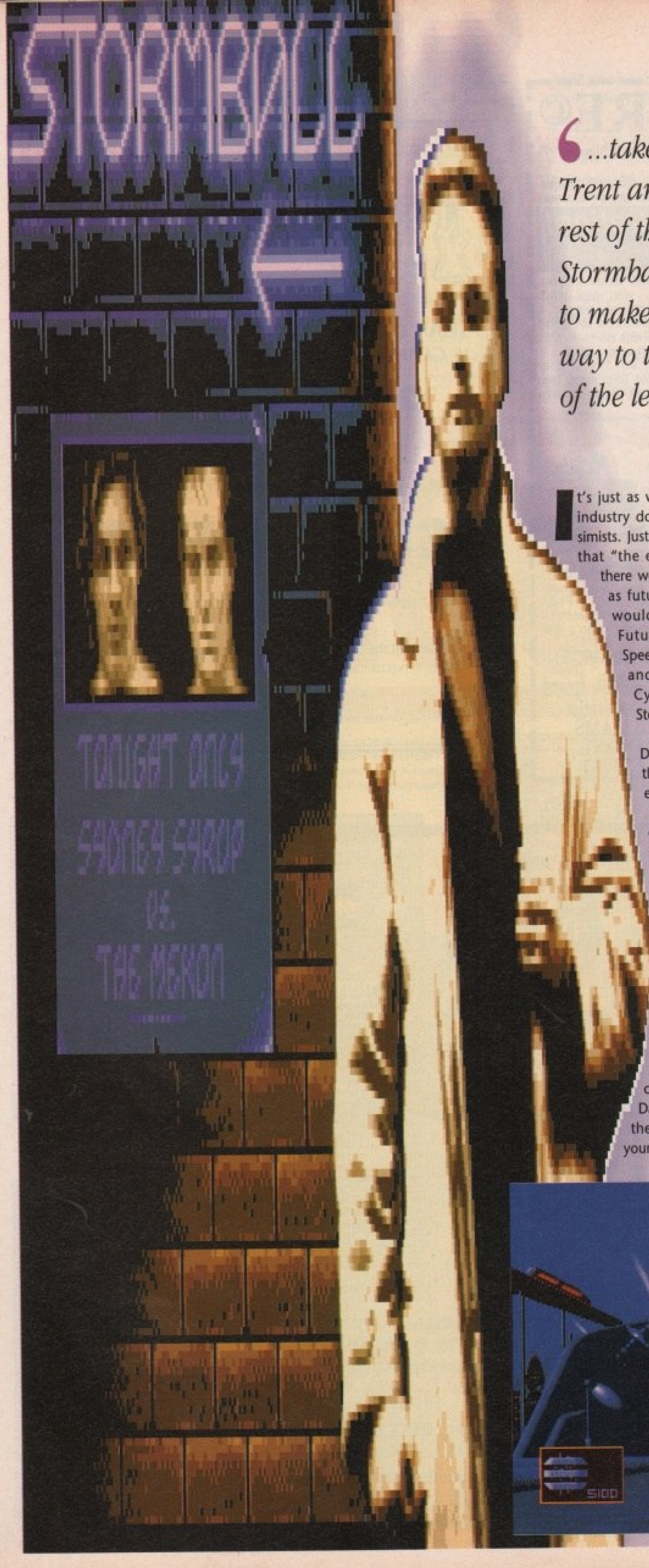
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...take on Dan Trent and the rest of the Stormballers to make your way to the top of the league

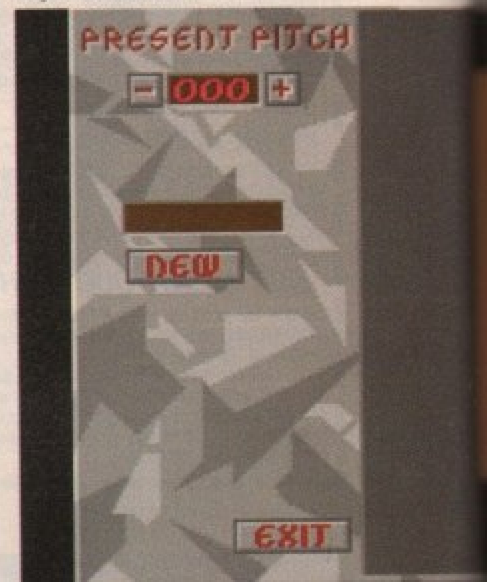

The blimp flies overhead as the action begins in the stadium below

It's just as well that the software industry doesn't follow the pessimists. Just think if they followed that "the end is nigh" bunch – there would be no such thing as future sport. And where would we be then? No Future Basketball, no Speedball, no Speedball II, and God forbid, no Cyberball and no Stormball.

Just a few weeks ago Dan Trent was wishing that the world was at an end.

He was a major star on the Stormball circuit before he lost his hand in a freak accident while playing.

Thanks to the miracle of modern surgery he was fitted with a mechanical glove which enabled him to keep playing the sport he loved. And now he's back, hungry for success. You can take on Dan Trent and the rest of the Stormballers to make your way to the top of the league. The basic rules of Stormball are a doddle. Two opponents move around on hover boards over their own half of the pitch. The ball is then thrown into your opponent's half, hopefully in such a way that your opponent can't intercept or catch it.



If the 40 pitches provided can't keep you happy, you can design your own

By throwing the ball over bonus tiles and score multipliers you rack up points. The player with the most points at the end of the four quarters is declared the winner.

This is a one or two-player action-packed game. In one-player mode you



Before you enter the stadium you can set the game up to suit yourself





This is more like it, the start of the third quarter and SIDD is getting smashed all over the pitch



SIDD is out of position so now is the chance to put one away for loadsapoints



Thad against Larry, a bit one-sided this as Larry has never actually won a Stormball match



After practice join the league and take on the big boys to earn some big dosh



The ball comes flying towards you so try to intercept it and send it whizzing back

There's a big battle brewing...

STORMBALL

Publisher: **Millenium/US Gold** Price: **£24.99**

can practise against a droid known as SIDD to hone your skills. When you have attained the appropriate skill level you are ready to enter the league.

To play the professionals you must first put up some money – the better your opponent the more money it costs to play him. If you win you get back your original stake plus the same again as a bonus. Of course, if you lose it's back to the training ground.

If you are really confident of a win you can always stake a bet outside the arena with Dodgy Dexter. He is the man responsible for getting Trent back into the Stormball arena after his injury but he is despised nonetheless, and the feeling must be mutual as the odds he gives on you winning are never that good.

Control of the man is fairly easy – simple movement causes the board to move over the pitch, and to catch the ball position your man to one side as it passes.

Then throw it back and try to aim it so that your opponent can't reach it. This can be frustrating as he catches it with no difficulty and you race all around your half in a seemingly pointless pursuit.

If you become bored with the computer-generated pitches you can always design your own. Stormball really only comes into its own in two-player mode where the screen splits to allow both players the same view.

There's loads more pleasure in beating a mate than beating the computer opponents. But this is the same for all games in this genre.

Unfortunately, a less than brilliant use of colours mars what could have been an excellent sports game. When it comes to the crunch, buy Speedball 2 instead – it's infinitely more playable and more fun than this. Stormball is a real disappointment, but Millenium will bounce back.

Thad Beaumont

FINAL JUDGEMENT

70

Sound

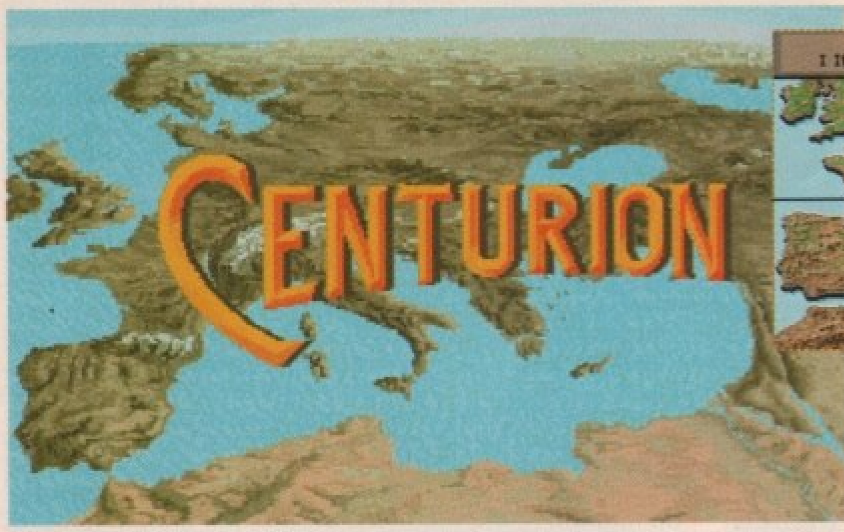
Nothing major here. The few bits of speech are good, if not very varied. There is no music during the match and the spot effects are chirpy but again, nothing special.

Graphics

Unimaginative use of colour – I'm sure there's more than just brown in an Amiga's palette. There are some very nice intro screens but it's the game graphics proper that should be well done. The movement is smooth enough but there isn't much detail to the characters.

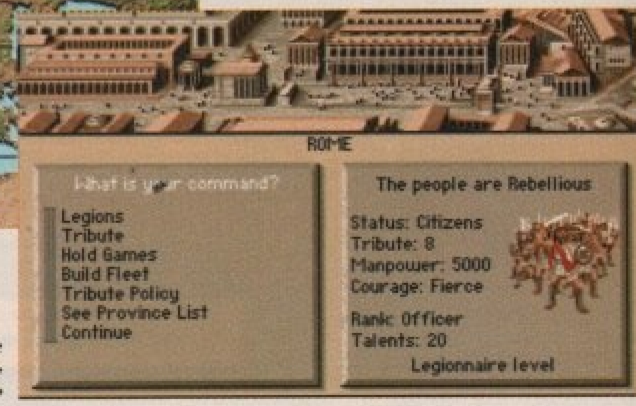
Gameplay

It's awkward at first to intercept and catch the ball – it's really frustrating to miss it only to see it go whizzing by, bounce off your tiles and straight back to your opponent. There just isn't enough here to hold your attention for very long.





Anyone fancy a bit of domination? World domination that is



The peasants are revolting sir. Yes they are rather aren't they?

CENTURION

Rome wasn't built in a day

Publisher: **Electronic Arts** Price: **£25.99**

All I can say about the Romans is that they must have had good night vision. Well they say that Rome wasn't built in a day! But enough of the bad jokes.

As you probably already know, the Romans' idea of a good time was either to organise gladiator battles that made even Millwall football fans look like wimps, or to race around in chariots that would put boy racers to shame. And if that failed to amuse, they would go and invade some poor country for a bit of fun.

In Centurion it's up to you to do just that. You begin as a lowly officer, the lowest commanding rank in the Roman army. This lack of status is not for you – you have to move up through the ranks until you attain the respect of the masses in the role of caesar.

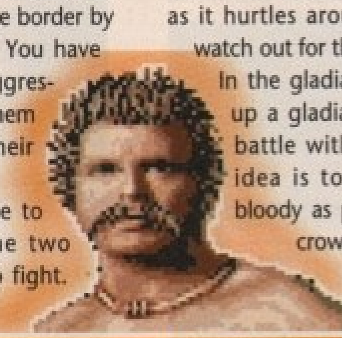
There are several ways to gain favour and you will have to use a combination of them to advance in rank. The most obvious is by adding other provinces to the Roman Empire.

There are two ways to do this – you either negotiate a treaty or you go in and kick the butt of the defending army. Of course, with the latter option you run the risk of having your own butt kicked in the process.

Strengthening any peace treaties you have made is also a good way to gain popularity with the hierarchy. A slightly more action-packed way to gain favour is to organise chariot races or gladiator fights. This method never fails to please an angry population and make you a few talents in the process.

The main screen of the game shows a map from which you can move your forces into neighbouring countries, but be prepared to be met at the border by some pretty angry natives. You have the choice of behaving aggressively or politely towards them in your attempt to add their lands to your own.

If all else fails you move to the battlefield where the two opposing forces line up to fight.



You can adopt various strategies in battle which will affect the eventual outcome – and whether your army is decimated or not.

The arcade-like parts of the game are the races and the gladiator battles. The races feature a two-part screen, the top is a map showing your position on the track and the position of your opponents. The bottom shows your chariot as it hurtles around the track – just watch out for the corners.

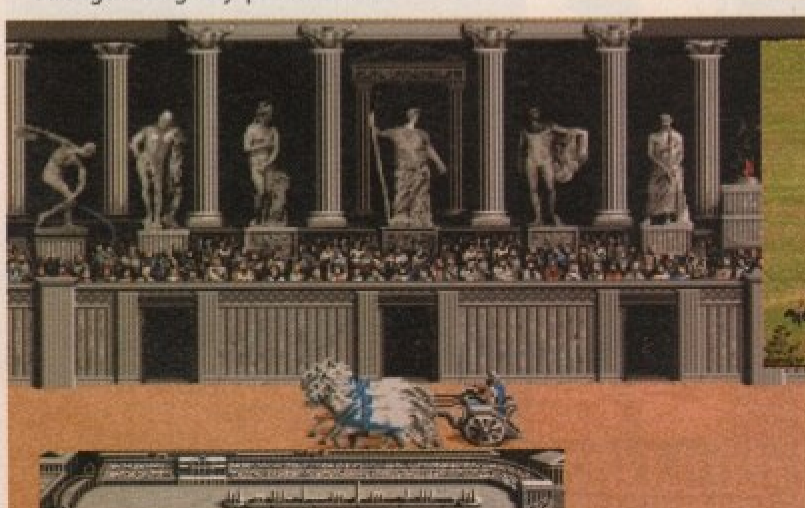
In the gladiator battles you train up a gladiator and take him to battle with an opponent. The idea is to make the fight as bloody as possible to please the crowd.

Centurion is a fine war game which includes some great arcade sequences. It's ideal for newcomers to the genre because it has a simple control system.

Of course, it's tough at the start – but no one said becoming a caesar was going to be easy!

Dave Luckhurst







One way to keep the people happy is to hold chariot races. They all turn up just to watch the crashes

Oi! Move over into your own lane. Those boy racers think they own the road



Intense strategies, battle plans and 'ard nut soldiers are all needed to win battles

Graphics

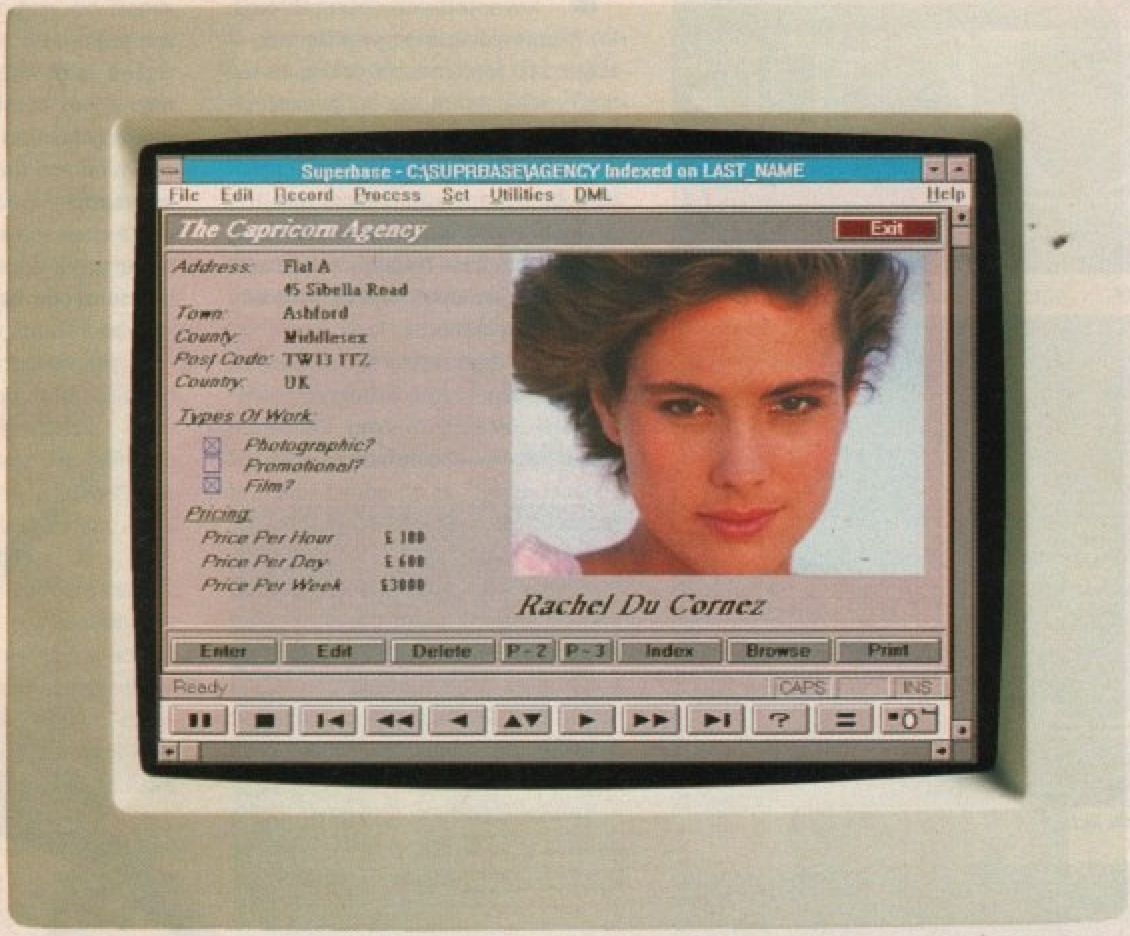
Very pleasing all round with some excellent attention to detail. Just wait 'til you see the scene with Cleopatra. Some of the best seen in a war game with excellent arcade scenes.

Sound

Really good tunes and effects – quite surprising for a game of this ilk. The battle effects are especially tasty but it is generally very impressive throughout.

Gameplay

The intense strategy is broken up by the arcade scenes. It's very easy to get into because it has an easy control system but perseverence will be needed to get anywhere near the rank of caesar. This could become one of the classics of the genre.



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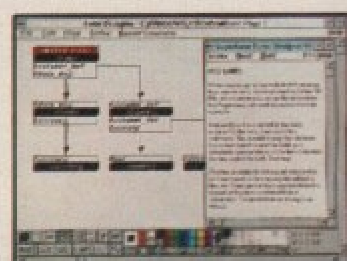
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Skyflash armed and locked on to an enemy plane


The Mig goes into a steep turn to break my missile lock...


But he can't get away! The square means he's locked in solid


▲ There goes the Skyflash missile! ▼ Scratch one Mig!



The mission plan seemed pretty simple. All I had to do was follow a tortuous course through the hills, avoiding enemy missile sites, at about 200 feet and 500 knots, to the tiny building which was my primary target.

Once there, a simple matter of precision bombing would leave me the straightforward task of navigating my way back to base through a solid wall of seriously annoyed, and by now very alert, enemy defences.

All in a day's work for a Tornado pilot, I thought, and, tossing my white silk scarf carelessly over my shoulder, I winked at the ground crew, shouted "chocks away!" as an added touch of bravado, and powered off into the gathering dusk.

Things went well enough at first, and I slipped through the first line of missile sites without incident. After only a few more miles, however, I realised with a trouser-endangering shock that the flight planning map had not been entirely up to date.

Smack bang in my path there loomed a SAM site, and I heard the threat warning begin to whine in my ear.

Praying for luck, I flipped off the autopilot and wrenched my Tornado round in an accelerating turn, almost blacking out from the high G I was pulling.

Too late! The threat warning, by now doing banshee impressions, was suddenly blanked out by the roar of an explosion and the HUD flashed a damage warning.

No need to ask what had been hit, however, as the controls began to sag like someone had coated the wings with lead.

I flattened out of the turn with difficulty, hit the deck at 100 feet, and punched the throttle for all I



Graphics

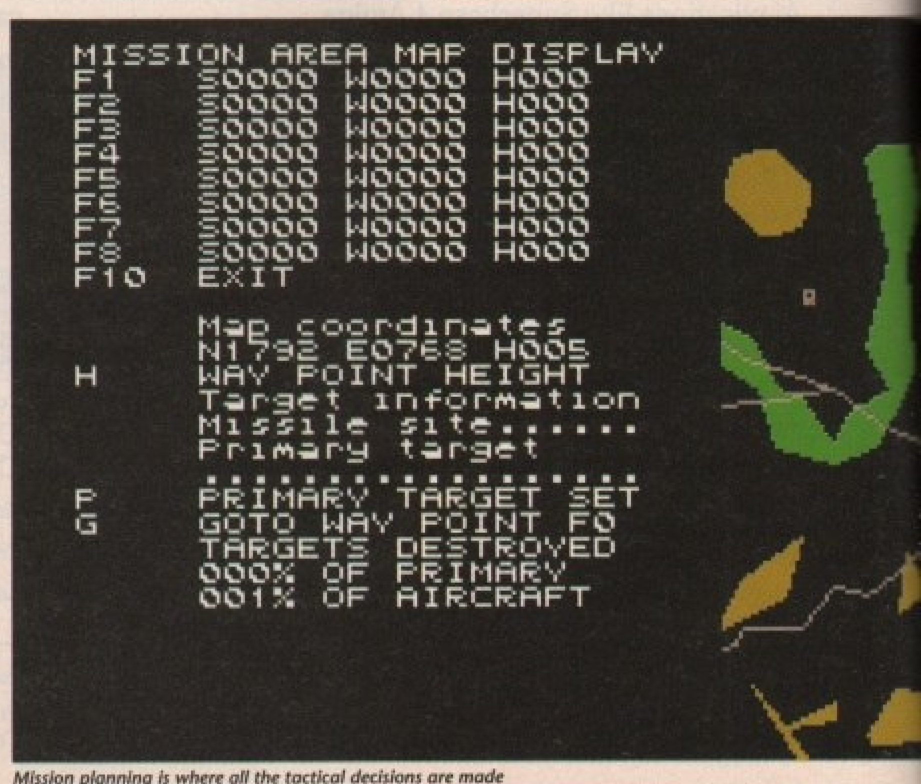
Not as good as some flight sims, but screen update is smooth and quite fast, which is a nice change.

Sound

Good enough for the purposes to which it is put, which are necessarily limited in a flight sim. The explosions are satisfyingly loud and violent.

Gameplay

Complex and involved in the long run, but with very good dogfights to keep the excitement levels high. ProFlight is pitched at just the right level for flight combat fans.



Mission planning is where all the tactical decisions are made

was worth, reaching 800 knots in no time. Then I noticed I had another problem – an airborne one.

The Mig was above me and on my seven o'clock, so I pulled up as sharply as the controls would allow, hit the air-brake to lose speed, and went into a yo-yo roll.

The manoeuvre worked! Unfortunately for my opponent, he obviously had slower reactions than I, and before he knew I was now on his six, I'd sent a Sidewinder up his tailpipe. Scratch one bird!

All that was left for me to do was return to the correct flight path, finish my precision bombing attack, and nurse my damaged ship back to base. As I said, all in a day's work for a Tornado pilot.

HiSoft's first entertainment release may be a serious flight simulation, but as it revolves around one of the world's fastest warplanes, it also comes with a comprehensive combat option, allowing it to challenge F16 Combat Pilot and Falcon for the crown of the flight combat simulations.

ProFlight starts off on the right foot by concentrating on the Tornado which, as the fastest aircraft in the world at low level, is ideal for a flight combat sim. Fast flying and a healthy wodge of combat options carry the program along so well that it's possible to forget ProFlight is designed to be more simulation than stimulation.

From the word go the program was developed to be as realistic as possible, and was built around complex flight algorithms to match as closely as possible the feeling of flying the real thing.

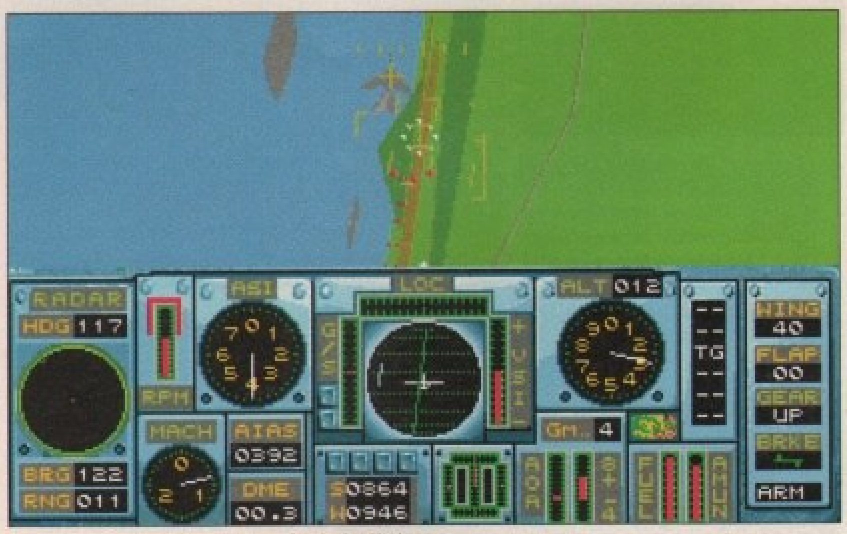
I was relieved, therefore, to discover that my version of ProFlight supports analogue joysticks. The first version sold did not contain this feature, but owners of these copies can recieve a free update from HiSoft if they register as a user before July 1st, so send in those cards now, folks!

Without the analogue option, control is centered around the mouse, which as a proportional device goes some way to providing realistic flight controls.

There is a digital joystick option for those with a perverse need to cripple the aircraft before it gets off the deck, but I wouldn't recommend it.

With an analogue stick, the armchair flyer has the best possible simulation of real aircraft controls, so the omission would have been a serious one, especially considering the realism angle taken by HiSoft. Please take note, software companies!

With analogue joysticks such as the Voltmace Delta 3A selling for only £17, there's no excuse for not providing for them in flight sims. Now I've got that off my chest, I have to admit that ProFlight flies like a dream, and both mouse and analogue joystick control works very well once you get used to it.



Cannon-firing dogfights are great fun in ProFlight

Digital joystick addicts might need some time to adjust, but with practice, both offer a much more sensitive and manageable form of control.

Once on the runway the pilot can configure his or her aircraft to make the level of realism, and hence flight difficulty, as high or low as required using the extensive autopilot option.

Flaps and stabilisers can be taken care of by the computer, as can a host of other tricky flight controls, to make life as easy as possible for the harassed pilot lining up for the final bomb run. It's even possible to have the autopilot take the aircraft all the way to the target via several waypoints, though it won't drop the bombs for you.

For beginners there's a crash inhibitor, so you can bounce the plane off the ground as hard as you please while you've still got your L plates. All in all, the extent to which the program can adjust to the individual pilot's needs is very gratifying.

Combat, rather than being a throw-away concession for adrenalin freaks, is an integral part of the program, and includes a detailed mission planner, ground and air targets, and a campaign option.

HiSoft launch a serious contender

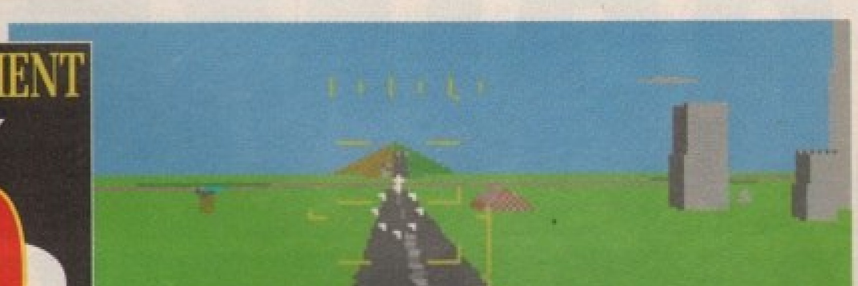
ProFlight

Publisher: **HiSoft** Price: **£39.99**



FINAL JUDGEMENT

80%



The automatic throttle makes landing relatively easy

The map area is very large and conveys the impression of space often missing from other flight sims. There's nothing like a "now leaving map area" message to burst the realism bubble.

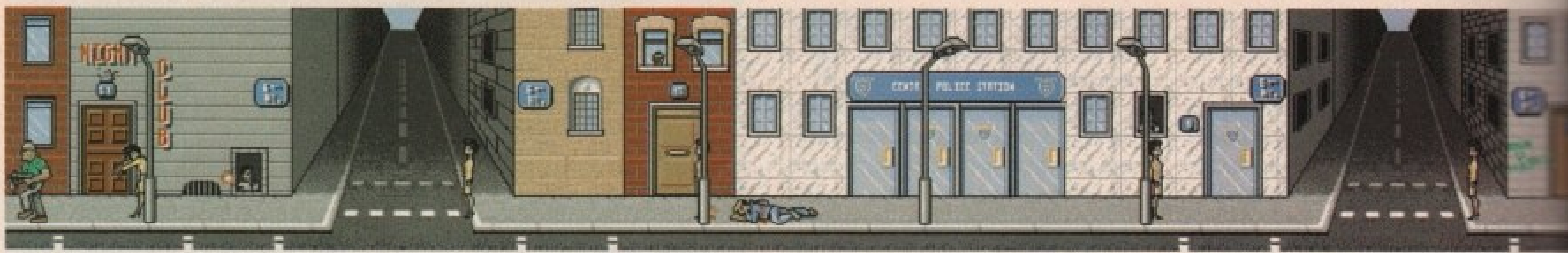
Dogfights are very enjoyable, with enemy fighters acting intelligently and using tactics of their own. Locking on and firing a missile is not the end of a fight, as the Mig will often decoy your missile with chaff or flares. So towards the end of long missions I usually found myself having to resort to cannons, all six of my missiles having been used.

Bomb runs are also rather hairy, as many of the targets are protected by missile sites. This forces you to plan the final approach to a target carefully, so that exposure to SAMs is kept to the minimum. In some sims it's possible just to fly straight to the target and back again, but in ProFlight, mission planning means just that.

ProFlight's long term appeal is guaranteed if you're a sim buff, and it will be a big hit for people who enjoyed F16 Combat Pilot. Those who prefer the more simplistic flight combat games might give up at the prospect of having to master aircraft controls, or fly within the realistic limits of pilot and airframe.

Any serious gamer who perseveres with ProFlight, however, will be rewarded by a simulator that blends flight realism and excellent combat in a way that few can match.

Sandra Foley



Your beloved Uncle Don C has decided to quit the family business before someone makes him quit. The only person who could possibly take over is you.

It's up to you to become the crime king of the city and the easiest way of doing this is by becoming mayor. Don't laugh, someone has to get elected, so it might as well be you. If any of the other contenders get in your way you can always deal with them in true Mafia fashion – you know, concrete boots or something like that.

The basics are simple. You choose whether you want to lead an Italian or Chinese crime family consisting of three characters, and you take control of one of these as he or she walks around the town.

Now this ain't no ordinary town and lying around the streets you will find useful everyday objects like safe codes, door keys and ammo. These are used to gain access to buildings, and to the people and objects inside. The objects can then be used for the gentler art of blackmail – now that's one way to win elections!

There are 20 files dotted around which could reveal some juicy gossip on any of the town's leading figures. Store these and use them later on.

Avoiding the police is also a good idea, especially if you're a bit trigger-happy, but a police locator beacon will soon sort that problem out. When you have a bit of skill on the gun and have found some dynamite and a detonator, you could always try to rob a bank to increase your finances and your social standing.

Crime Does Not Pay players will spend hours at first just wandering around trying to work out what you are supposed to do.

The control method, although somewhat unusual, is quite easy to get used to and there are loads of different places to explore but they all look a bit "samey". It's not a bad game but then it's no Eye of the Beholder either.

Thad Beaumont



Meet the Italian team, virtually unchallenged for the title of meanest bad guys in town



Now meet the only people who can get close. The Chinese are hard, dirty and apparently know something about the use of tongs. But why use kitchen utensils?



Time to bite the bullet as you raid someone's office for ammo and information. Stay too long and they might catch you



Ha, juicy piccies of the banker with a prostitute. They might come in useful later on for a bit of blackmail

Ronnie Biggs says...

CRIME DOES NOT PAY

Publisher: **Titus** Price: **£25.99**

FINAL JUDGEMENT

65

Graphics

Big bold characters look fun but aren't terribly well animated. In fact, if it wasn't for the way the different characters pull their guns, it would be lousy. The scenery is very well done but the interior scenes start to look the same after a while.

Sound

Crime Does Not Pay is let down badly by the sound. Terrible music greets you at the start and the effects seem to be limited to a pathetic gunshot and a few others. If ever a game could be played with the volume down, this is it.

Gameplay

Initially it's very compelling as there is loads to explore, but after a while it becomes boring and repetitive. Although it won't be finished at the first attempt there isn't enough there to keep you trying. Spend your hard-earned dosh on something else this month.



Morlo leapt the final divide as the first disc slammed into the wall. As he landed, instinct was all that stopped the second disc from hitting home. The third he never saw, never had the chance to block.

It hit hard and burned hot and every breath of air was blown from his aching body. Across the court cruel laughter echoed from his opponent.

Then in a split second of silence a single bead of sweat fell from his tortured face and dripped slowly down on to the last remaining tile. He knew this had to be the one, and with a final desperate lunge his only chance hurtled across the divide.

The smug expression of his opponent turned instantly to one of shock as she frantically tried to stop the unstoppable. This final desperate scramble was no more than a vain gesture and as the wall smashed into a thousand shards of exploding crystal her shock turned to horror as infinity appeared beneath her feet.

A scream rang out as she plummeted into the abyss... this is Disc.

When describing an essential simple game it's difficult to convey the emotions, excitement and desperate struggles it contains. Hopefully this little monologue will give you a taste of what lurks within perhaps one of the best action strategy games of the year.



The challenger savours the taste of victory

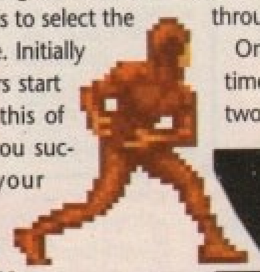
Killer frisbees in the 21st Century

DISC

Distributor: **Infogrammes** Price: **£25.99**

Combat options

After loading and choosing the number of players the next task is to select the character of your choice. Initially all eight available players start at the rank of novice, this of course can change if you successfully challenge your peers in the arena.



There doesn't seem to be any difference between individuals, so it's purely a case of which particular persona you want to take on. As all of the eight are men, this was a rather tricky decision for yours truly.

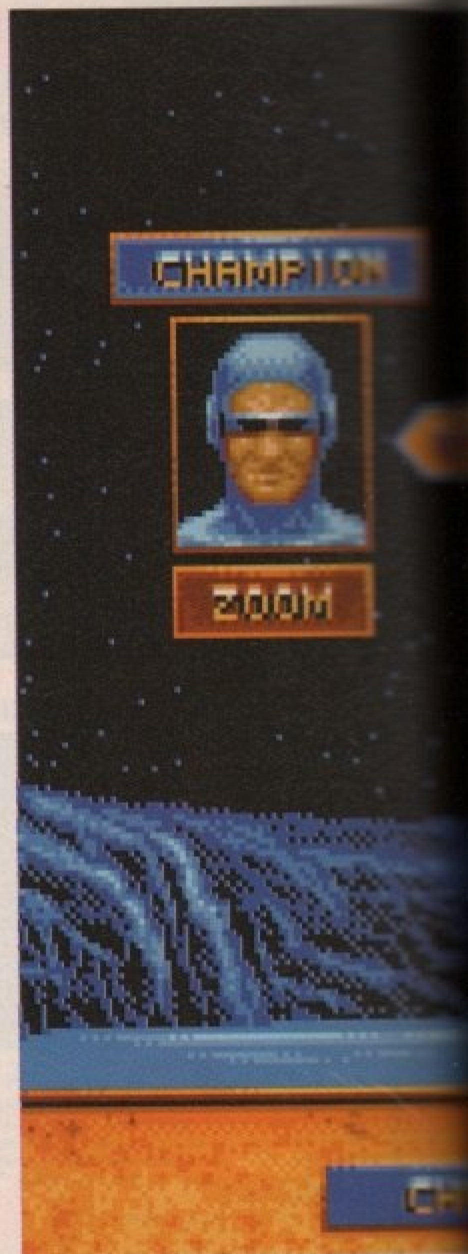
Once your choice is made it's time to pick a particular challenge. This can vary between training, challenge, tournament or championship.

The training option is an essential for the newcomer as throwing, aiming and blocking need to be second nature if you want to make any progress through the rankings.

Once your training is complete it's time to take on the opposition. In the two-player game the choice is limited solely to your opponent, but the singles championship mode is probably best for the beginner, as it pits you initially against opponents of similar skill.

As you progress your rank will improve, but unfortunately so does that of your opponents. The tournament option is perhaps the fastest way to glory, but be warned, if the gods are against you, your first match could have you facing a champion or perhaps even a great guide. As with the championship game, your ranking improves as you progress, the only problem is you might not live long enough to enjoy your new-found fame.





The ultimate challenge, a lone human takes on the Great Guide

The last option is a straight challenge so, for example, if you've just lost a close contest you could set the record straight without the hassle of facing a whole bunch of bad guys before you get to your man.

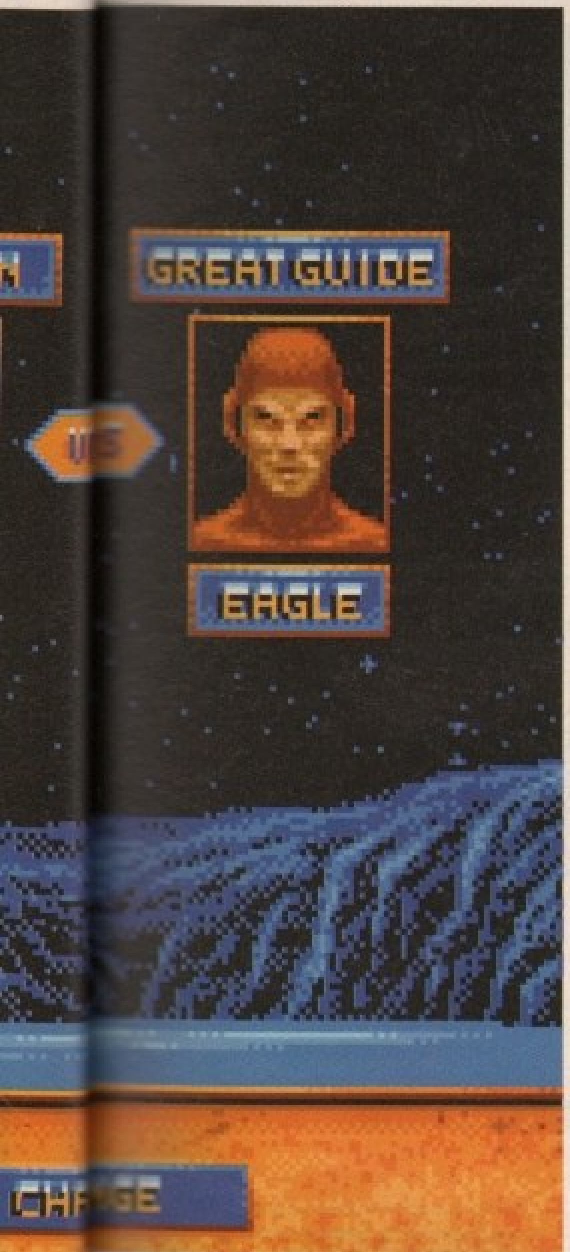
Challenging isn't limited to players of similar skill, so if you feel lucky you



Leaping a divide while dodging the discs in a life and death struggle



Our hero defends himself against an incoming missile with ease



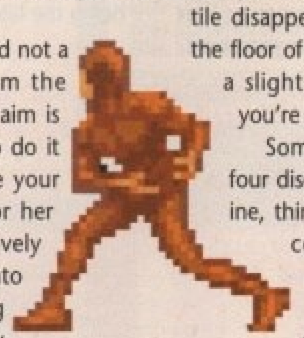
could go straight to the top and by beating a high ranking player instantly leapfrog the rest of the field.

The gameplay is the real strength of Disc, being a combination of action and strategy. This combination has already been proved a winner this year by the massively popular Lemmings.



The choice is yours, pick your hero and take on the world

This may seem a rather strange comparison, but nevertheless there's definitely a similarity between the two. Disc is certainly fast and furious, but if logical strategy isn't applied along with some fast reactions your challenge will definitely be a short one.



The game is simple and not a million miles away from the arcade classic Tron. The aim is simply to survive, and to do it you must either deprive your opponent of all of his or her body points or alternatively send them screaming into the abyss by destroying the tiles on which they stand and which make up their end of the court.

To do the damage you hurl discs across the void. If your opponent is struck a body point is lost. However, if the disc is defended you become the one under attack and as the weapon ricochets back across the court it's your turn to defend. If a disc is thrown which neither strikes the player nor is defended it will inevitably hit your opponent's wall and this is where the strange shapes and symbols come into play.

The number of sides on each symbol tells how many hits are left on its particular panel. When a circle is struck the tile disappears and its counterpart on the floor of the court vanishes. There is a slight pause beforehand, but if you're too slow it's game over...

Some games have as many as four discs in play. As you can imagine, things can become just a little confusing as they bounce around the walls slamming into tiles and players alike.

If you can't keep a track on which have been thrown, rebounded or defended finding out can be a painful experience.

The only way to defend yourself and your precious platform is to deflect your aggressor's incoming arsenal with a defensive disc, the only use of which is to protect you and your wall. Once defended, a disc is on the attack and if it returns undefended it can be caught and launched at the target of your choice

Various bonus discs become available intermittently thanks to special tiles which appear at random. If hit they endow a specific ability such as speed, added power and so on to your discs for a limited period.

Two player perfection

Disc is a rare beast, not only is it excellent as a solo challenge but it becomes even more impressive as a two-player contest. The human v human option is one of Disc's real strengths, putting it easily on par with such two-player classics as Kick Off.

The two-player game differs from the rest as it's played over several legs, with victory only being secured by two wins in a row.

Each player takes turns at either end of the court as apposed to the single game which always places the human player closest to you.

Against a machine it's good, against a screaming, yelling and often swearing human it's even better.

Stephanie Ross

Sound

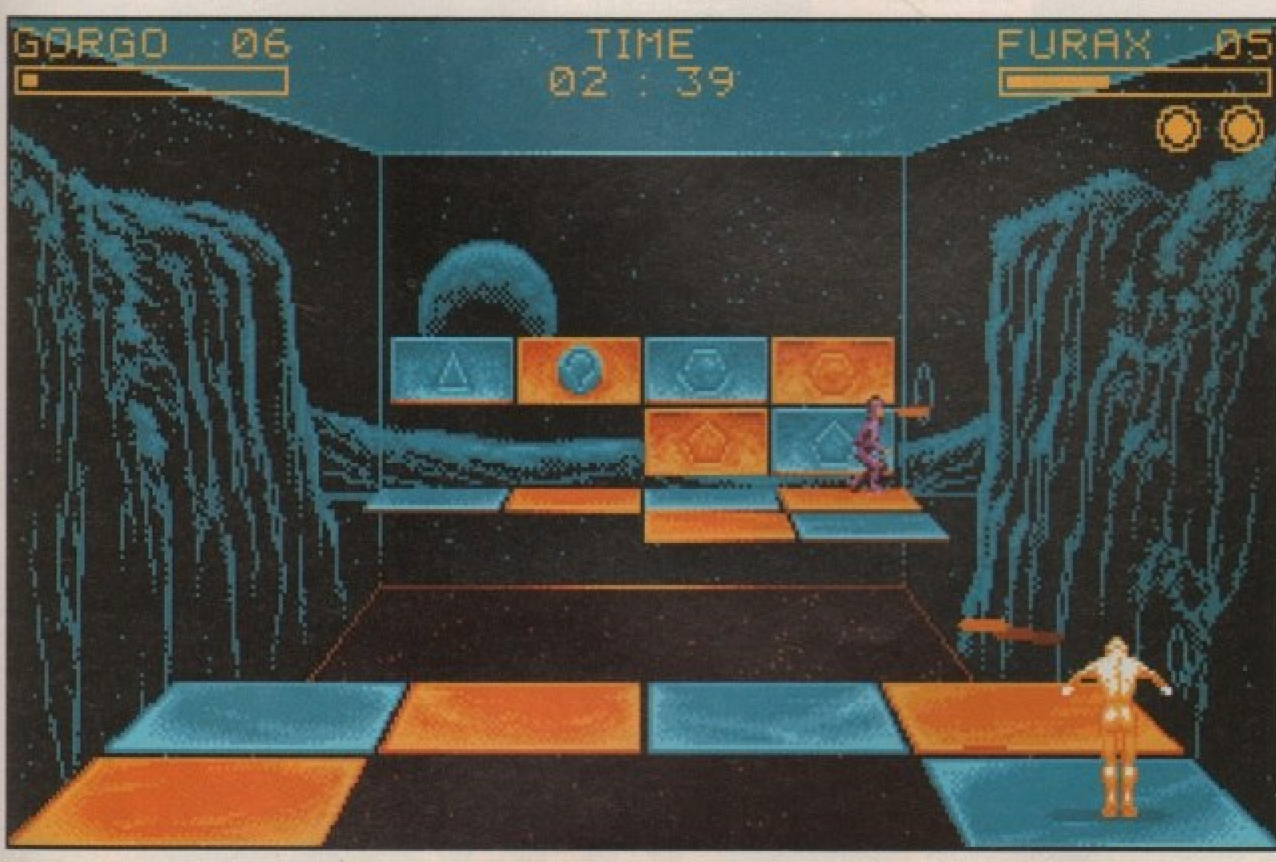
Sound is not always a strong point in action strategy but Disc is an exception. The samples are, in general, superb and add a good deal to the atmosphere.

Gameplay

Gameplay is very impressive and as a two-player struggle it's nothing short of faultless. If you want to take on a friend in a fight to the death this is a must.

Graphics

The animation and range of character movement are very good and when these are combined with the well designed and drawn court the overall effect is excellent.



A fraction too slow and the disc hits home

FINAL JUDGEMENT

85

If the Post Office can't do it, call in...

HYDRA

Publisher: Domark   Price: £24.99

Being a courier may not seem like a very exciting job. About the most fun you will get is delivering those suspiciously shaped "plain brown wrappings" to old men in trench coats.

But in the 21st Century all this has changed. Standard couriers just couldn't make the grade any more, their methods of delivery weren't reliable. One man rose above the rest for security and speed of service. No one knows his real name, but if the various governments can find him, they can hire Hydra.

The roads, airways and waterways are now ruled by terrorists. Nowhere is safe because they plunder anyone who dares to travel those routes. It's up to Hydra to run the gauntlet of terrorists and deliver sensitive and top secret packages to their destinations.

The game puts you in the role of the great courier himself as he tries to deliver these packages. At the beginning you pick up cargo in your jet boat and then you're off.

The terrorists know you're coming and throw all they have at you. Of course, you're not unprepared yourself and your boat is equipped with the very latest state-of-the-art firepower, so let those lowlife terrorists have it.

They will attack either singularly or in groups but these attack patterns are predictable so there's no real problem. When they're shot some of these craft very conveniently drop either fuel, boosts or money icons.

As your own fuel supply is very limited you will need to pick up as many of these as you can to finish the mission. The boosts can be used to make your boat leap out of the water for a short time and catch the money balloons that sometimes appear in the sky.

There are nine missions with a total of 31 levels to go through to deliver cargo which varies from the Crown Jewels to a top-secret nuclear device. Cor, aren't these governments trusting! At the end of each stage there is a shop where, if you have enough money, you can buy extra weaponry for your boat.

Hydra should have been an enjoyable 3D shoot-'em-up arcade conversion, but unfortunately it isn't. The action is quite slow and the gameplay is very repetitive and boring.

This seems to be the norm lately with Domark's arcade coin-op conversions, this and Skull And Crossbones being the latest. Give this one a miss.

Thad Beaumont



That's a nuclear device you have in the back



Look out for these power-ups lying around the water – you won't finish the course without them

Graphics

The 3D visuals are unremarkable and about the only thing I can say in the game's favour is that the swirling effect on the water is very nice. Otherwise it's nothing special.

Sound

Having already seen the coin-op I was expecting some half decent sound. Again I was badly disappointed – half-hearted tunes and effects ruin a potentially good licence.

Gameplay

Hydra suffers badly from repetition. It gets very boring after the first couple of games. There's no addictive quality to keep you coming back for more. With slow-moving graphics it just doesn't take off.



Nine levels in all, solid arcade-blasting action. Well, I lied about the last bit, it's about as exciting as watching paint dry

Suffering from tunnel vision as you come to the end of a level. Just sit tight and wait for the next one



Not bad for a special weapon – it may be a bit extreme to let off a nuke but now you can collect those floating power-ups

FINAL JUDGEMENT

60%

3D CONSTRUCTION

Phil South opens up a new construction kit and forms an opinion

The 3D Construction Kit is a new interactive version of the famous Freescape 3D modelling system from Domark/Incentive. Freescape was Incentive's contribution to the 3D game era, with famous games like Driller and Castle Master. Now Domark/Incentive have put Freescape II at your disposal so you can create 3D games for yourself.

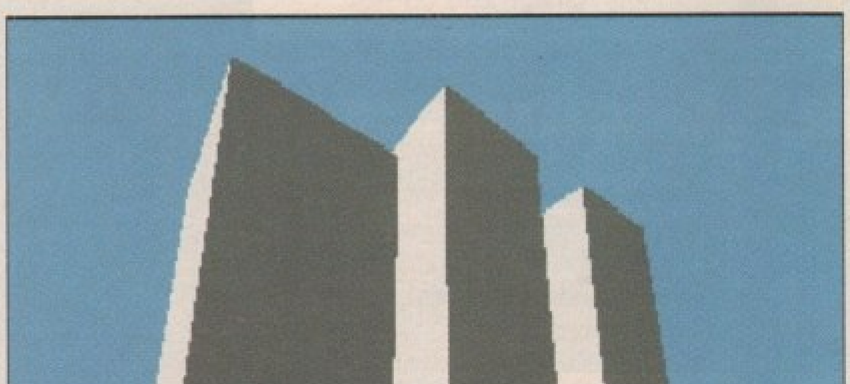
But the 3D Construction Kit is being sold as more a virtual reality system than merely a game creator. And to be fair it is more than this. The system allows you to make not only games but other more useful things – which is not to say that games aren't worthwhile, just that there are other uses for a 3D system.

Virtual reality has become something of a buzzword over the past year, and it has long been clear that for any product to be hot in '91 it would have to feature this concept. So the 3D Construction Kit, or 3D Kit as it is known, is heavily flagged as a virtual reality system.

This is stretching the truth a bit, as there is no provision yet for a pair of 3D goggles to make the view of your world truly "virtual". But having said that, it's a very fast, flexible and highly usable 3D system.



Just a trio of blocks, but these babies are many storeys high. Whole cityscapes can be built with the 3D Kit, then moved around in and explored



You can design a control screen – or what the 3D Kit calls a "border" – and incorporate it within a game. The control spots on the screen you use to move around the world are mapped to the areas covering the controls drawn onscreen

3D kit in use

Creating your own shapes and putting them together is simplicity itself, and the process is made vastly easier by virtue of the fact that shapes cannot pass through each other at any point. So fitting the pieces of an object together is easy – you just slide the bits together until they stop.

Object creation is done with primitives, like cubes, pyramids and rectangles. A group of buttons on the main screen is used to select the most frequently used options: Select, Copy, Create, Edit, Test, Reset, Condition, Delete, Attribute and Colour.

Select lets you select an object you've created, either by choosing it from the menu or clicking on an icon.

Reset clears everything, leaving you with a blank sheet of paper, as it were. Create allows you to choose from a variety of primitives, and the Edit function lets you alter the primitive objects and move them around.

Colour lets you select the colour of all the faces of an object. Each colour you select from the menu can be attached to a face, so you have to choose the right shades to complement the shading on the object or it looks funny. There's no light source shading here – you have to do it all yourself.

Condition and Attribute are game-related functions, and using these you can set what happens when you manipulate an object in a game.

Copy is a powerful feature. If you've created a perfect shape, you can dupe it for moving around. Walls, for example, are easy to create but hard to repeat, so copying them is the only way to get them all the same.

All the tools are easy to use and very little space has been wasted on the buttons. There are more complex choices on the menu bar, but most of the frequently used features of the program are on these buttons, meaning that they are always to hand.

Uses for the system

One of the first uses for the 3D Kit is the creation of environments which you can walk around. This is the virtual reality side of the system and enables you to make rooms and buildings. As with the games you create with the program, you can create a stand-alone version of your objects for other people to walk around.

3D games are also easy to do, although you'll need to have a scenario worked out before you can create a game. It doesn't pay to try to bolt a game together from scratch with the program in front of you.

Different rooms can be made and the

whole thing customised by creating a control screen using DPaint or other graphics package and pasting them into the program. Having done that you can tell the program where to find the control buttons and which part of the screen is the view window, and then you're away.

The final use for the program is object rendering. You create a complex object and rotate it to see how it shapes up to your idea. The example given is that of the space shuttle, and this is an easy example. You can't get much detail into the thing, but rough shapes are easy. As far as the creation of complex objects go, you may be better off with a full-blown rendering program like Real 3D v1.3.

Summing up

On the pro side you have to admit that 3D Kit is an excellent piece of programming and is very easy to use. The objects are created quickly, and even a complete beginner can be up and running in a matter of moments. You can make shapes, whiz them around the screen and bolt them together with ease.

The manual is a thickish wad of tightly printed instructions for the various controls, and hints and tips for the creation of objects.

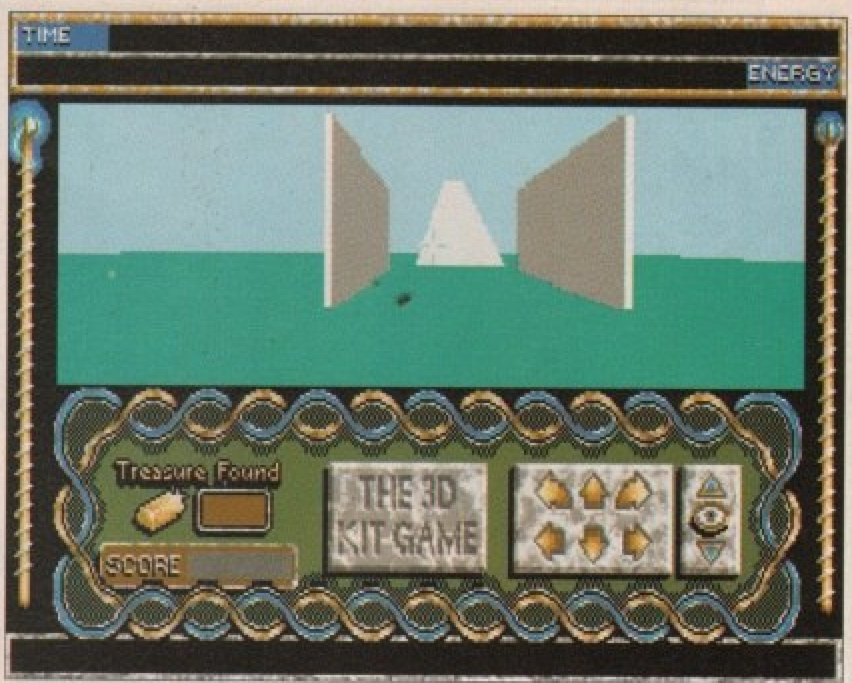
But there are a few drawbacks to all this wonderment. All things considered, 3D Kit makes a fair attempt at being all things to all men. But as a 3D design tool it is coarse and not very colourful, and you can't transport the 3D figures you make into any other format.

It is, however, very fast and allows you maximum freedom in the creation and placement of your objects. But where it really excels is in the creation of 3D Freescape-type games. Actually there's no "type" about it, they are real Freescape games! And using the DIY borders you can create exotic variations on this very popular theme in a stand-alone form.

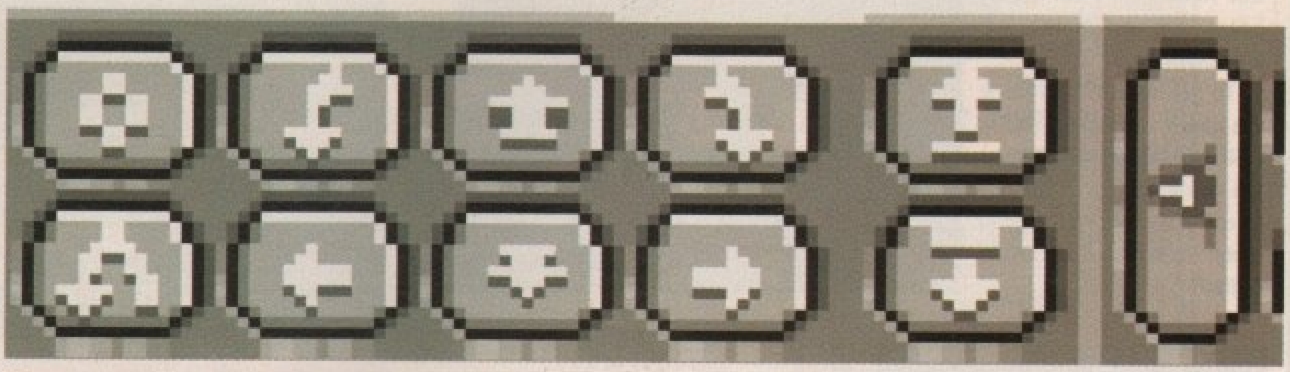
So is it virtual reality? Well, yes and no. You never really feel like you are there in the flesh, and the 3D effect is a trifle wide-angled in most cases, giving you the impression that you have the angle of view of a fish.

But despite these technical reservations, 3D Kit is very enjoyable to use, and one of the most absorbing programs just to goof around with that I've seen for a long time. Now all it needs is an interface to X-Specs or a pair of eye-phones and *then* you'd really be talking!

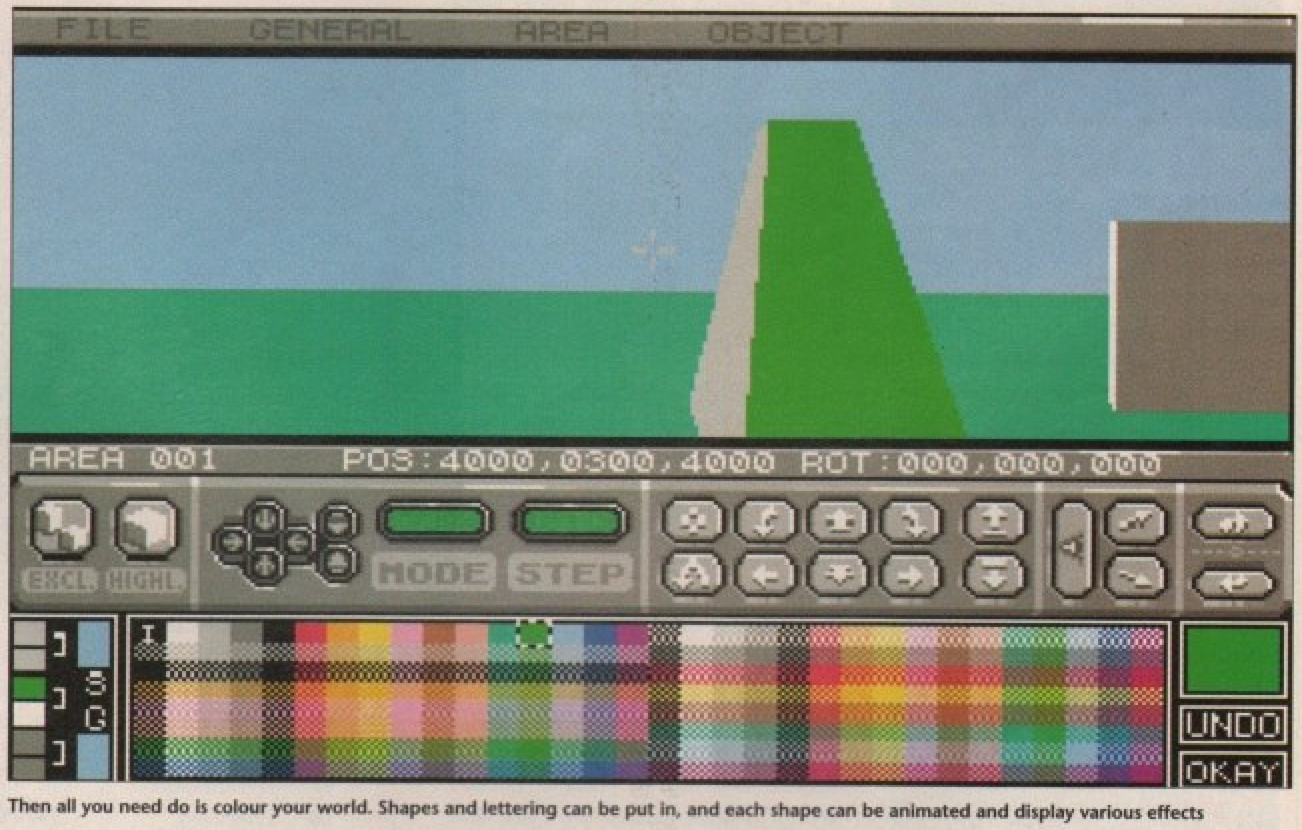
"3D Kit is an excellent piece of programming and is very easy to use. The objects are created quickly and even a complete beginner can be up and running in moments"



Once the program has been designed, it can be saved as a stand-alone program, like this one showing a view of the city skyscrapers



Movement control is easy using the point and click panel



Then all you need do is colour your world. Shapes and lettering can be put in, and each shape can be animated and display various effects



A group of buttons on the main screen is used to select the most frequently used option



We need you!

If you're the kind of person who can walk through Rainbow Islands, thrash Lotus Esprit and get home in time for Neighbours, then you're the kind of person we want to hear from. We're after tips for brand new games, particularly those reviewed within this issue of *Amiga Computing*. Not only will you be internationally famous, but you could even win something!

Send your tips to: *THE TIP SHOP, Amiga Computing, Europa House, Adlington Park, Macclesfield SK10 4NP.*
Come on, stop reading and get writing!

Jason Holborn is the man with the very hottest of the hot games tips

PREDATOR 2

The film may have been rather naff (Arnie wasn't in it, so it was bound to be!), but Activision's computer adaptation was quite a fun little blast-'em-up.

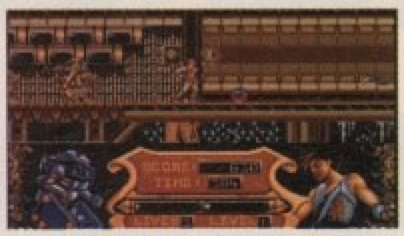
To get infinite lives, pause the game and type in YOUR ONE UGLY MOTHER. Restart the game and you'll be able to come back from the dead more times than Bobby from Dallas!





TURRICAN 2

Old Turrican may be one mean mamma, but even he needs a little help occasionally. To make him indestructible, select tune one, type in 42 and then press Escape twice. Like Batfink (remember him?), bullets will bounce off his bonce!



STRIDER 2

Add a touch of Perestroika to US Gold's excellent Strider 2 with this great little cheat sent in by Lisa Humphries of Semington in Wiltshire. To activate it, press Help, the left cursor key and 1 together. You can now skip levels by pressing 1-5.

CAR-VUP

Here's a great little series of cheats for Core's Car-Vup sent in by reader Barry Whitehouse in Norwich.

When the high score is displayed

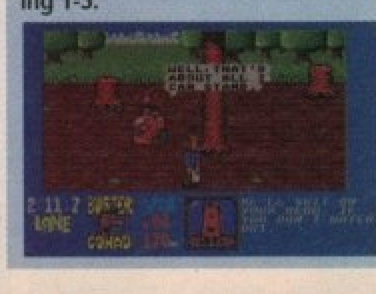


type BUMPER for unlimited bumpers, PUSSY CAT for an extra nine lives, WOOARRGH for speed turn (whatever that is), WHOOPSIE to start in the prehistoric level and finally ARNIE for 100,000 points.

VIZ

B*****KS!! (or should that be Mellie?!) If Virgin's (fnarr fnarr!) game of the adult comic is too hard (Ooer!), then try out this great little cheat sent in by John Maslin in York.

On the character selection screen, type in WHAT A GREAT LOAD OF B*****DS (I'll leave you to work this one out!) and the screen border will change colour. You can now skip levels by pressing 1-5.



SUPERCARS II

The original Super Cars was a pretty sedate little offering compared to its sequel, what with all your competitors trying to blow you off the track with laser guided missiles and such.

If you fancy getting your own back, type in player one's name as I WALK THE HILL and player two as INWARDS.

You will then be rewarded with 99 per cent of every weapon on offer. Not only that, but you'll qualify automatically, regardless of your finishing position.

Now get out there and win!

PP HAMMER

A cheat mode for PP Hammer? Isn't he the chappy who wears the baggy trousers and the sequinned jacket and sings *You Can't Touch This?* No? Oh well, it made a pretty good intro didn't it!

Anyway, here's the entire list of passcodes for Demonware's PP Hammer, a brand spanking new game that hadn't even been released at the time of going to press. How's that for an exclusive!

Level	Code	Level	Code	Level	Code
1	BEVDESRR	22	SJEDAATT	43	BURDIEGW
2	UDICGRAJ	23	HHUDJVST	44	JTDDCDUW
3	JCBBAJWI	24	SGRGSUGSI	45	BRAEEBIV
4	UAVBCHRI	25	DFDGRTUB	46	JJJJVAHU
5	AWHATGBH	26	SDAGERIR	47	BIGJWWCU
6	TVDWVFTG	27	DCJWGJGJ	48	JGWRJUJT
7	ITTWJDSG	28	SBCWAIUJ	49	FFTRITET
8	TSJVSCGF	29	CWAACGII	50	JEFHRSDS
9	ARCUFBUF	30	RVJBTFHH	51	FDCJERVR
10	TIWVGWIE	31	CUGBWECH	52	BBSJGIFR
11	IHISAVHD	32	RSWCJCJG	53	FAETAHDJ
12	TGFSCUCD	33	CRTCSSEG	54	IWBSCGVI
13	AEVTUSJC	34	RJFCFADF	55	EURSUEF
14	TDTJWRFB	35	CICBGWVE	56	ATHVWDAH
15	ICFJJJEB	36	RGSBAUFE	57	ESAVJCWH
16	TBCRSIWA	37	CFIADTAD	58	IJUUSARG
17	WWSHFGGA	38	REAWUSWC	59	EIGWEWBF
18	SVIRHFAW	39	CCUWWJRC	60	AHDWGVTF
19	HUBJCEWV	40	RBHGJICB	61	EFUABTSE
20	SSVJECRV	41	CAEGSHUB	62	IERBDSGD
21	WRHEVBBU	42	JVUGFFTA		

CHIP'S CHALLENGE

Never has a cheat been as obvious as this one. There's no messing around with secret code, no pressing pause and moving your joystick in strange patterns, just press C to skip levels – it's as easy as that!

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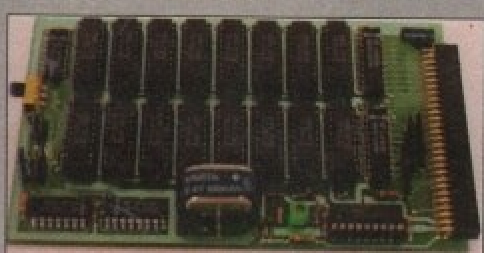
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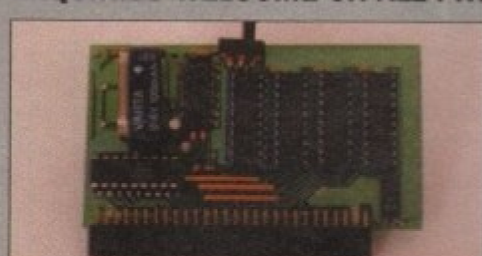
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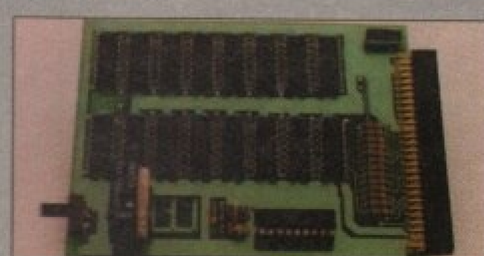
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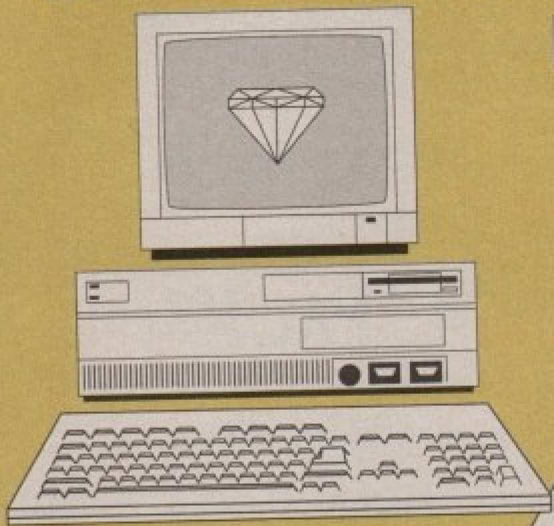
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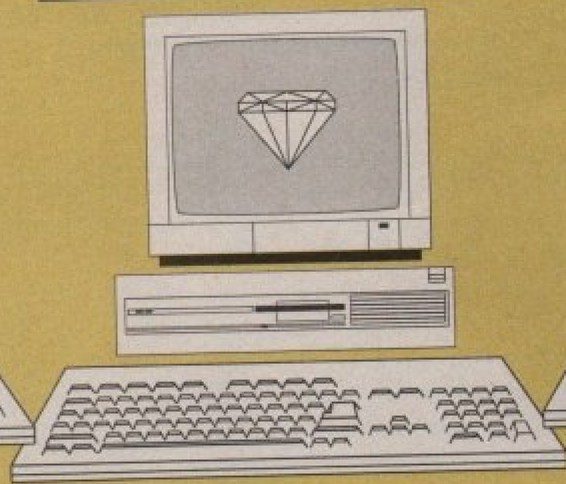
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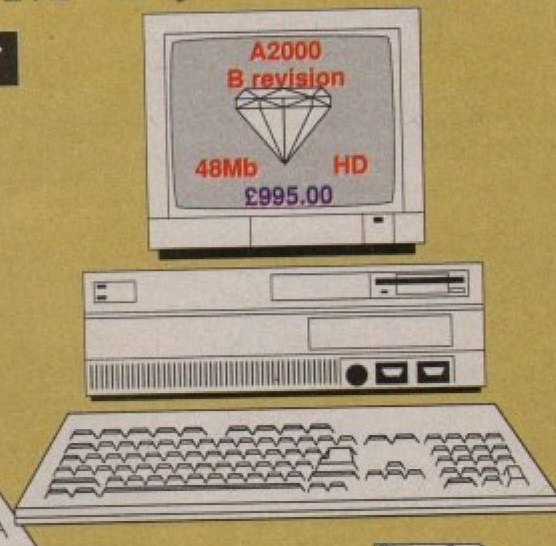
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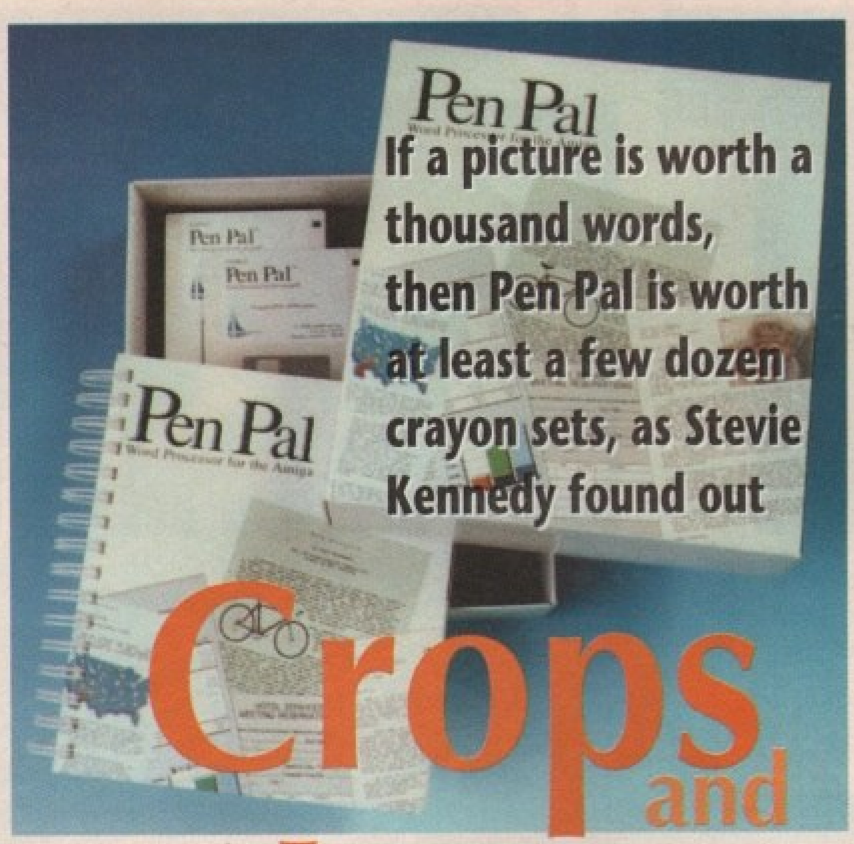
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If a picture is worth a thousand words, then Pen Pal is worth at least a few dozen crayon sets, as Stevie Kennedy found out

Crops and colours

No matter how often you look at it, the dratted thing won't go away. Scoff at the mere idea, deny its existence, or even insist that the whole thing is a figment of some marketing person's perrier-soaked imagination, the parish newsletter is here to stay, and with it the demand for a certain kind of wordprocessor.

Come to think of it, so is the club newsletter, the fancy-headed notepaper, and the fanzine. The one thing they all have in common is a demand for an Amiga program which will combine words with graphics in an easy and affordable way, and Pen Pal is one of the best available options.

The DTP touch

Pen Pal is one of the older packages available on the Amiga and one of the few major wordprocessors we haven't yet looked at in our monthly coverage of this area. It is, however, probably best considered as a package in its own right rather than as competition for the likes of Protext and Wordworth.

It boasts most of the usual wordprocessor features, with 100,000-word spell checker and comprehensive text formatting options, but its real strengths lie in its built-in database and, in particular, its DTP-like graphics tools.

With these, the Pen Pal user finds a program capable of loading and manipulating graphics faster and easier than any other Amiga wordprocessor. The results may not be as good as the output from programs such as Pro Page and Pagestream, but for those with eight-tone colour printers they're perfectly adequate.

Cropped to perfection

Graphics are loaded into Pen Pal by the Import Picture option which allows a series of operations to be carried out before the picture is placed in the document.

You can choose on which side of the graphic the text will flow and whether it will do so in a straight line or contour itself to the graphic. Size can be scaled down with an option to retain the picture proportions of the original picture, and you can choose whether or not the picture's background colour is to be made transparent.

Once all this has been sorted out, the image is placed in the document. From here on in it can be cropped and moved around with ease, and Pen Pal really begins to grab your attention with the speed at which it can move and redraw a graphic.

Graphics are easily picked up by clicking on them and holding down the mouse button to drag them around the screen. If repositioning operations are to be carried out, a click on the Select Graphic icon in the tool bar on the left-hand side of the screen results in a graphics box with the usual drag handles appearing around the picture.

Better still, though, is the Crop Graphic tool. Choose this and the cursor changes to a cropping tool which chops a graphic up by resizing the box around the picture. This is extremely useful for removing extraneous graphics or touching them up to fit perfectly into a document, and is carried out at an impressive speed.

What's more, if a crop is made too tightly, it is possible to "uncrop" by pulling the box back out. The cropped area is not discarded and will simply reappear when needed. This is handy if you're messing about to see what effect a crop will have on the graphic in question, and allows more experimentation with page layout.

Pen Pal's most obviously un-wordprocessor-like feature is the integral database, designed to give users the option to keep relatively straightforward databases and use them for mailmerging purposes.

The database, however, is an unusual beast and more than an electronic card index. In terms of the format taken by each database, options are pretty limited, but it will carry out simple column addition operations and is capable of including formulae so that the database takes on the aspect of a spreadsheet.

To make things easy for the user, the physical layout of the database is restricted to rows, columns and cells into which the user puts data which can take the form of dates, phone numbers, text, or formulae. There is an option to calculate the sub-total for any one column, and this in itself can be carried out in a variety of ways.

Apart from a simple total of everything in an "Amount" column, which is useful when keeping tabs on, say, the total value of all subscriptions paid to the club secretary, you can use subtotals on "Calc" columns with formulae containing any or all of the four arithmetic operators.

Power options

In addition to the extensive database definition options are some quite flexible editing and sorting facilities and, most useful of all, options to print labels, columnar reports, and mailshots with the merge facility.

The latter is particularly powerful when used in conjunction with the database, and can produce letters containing several data items as well as the standard form-letter-with-address type of mailmerge.

The whole database section is fast, easy-to-use, and an extremely useful addition to Pen Pal. In itself it doesn't match the likes of Prodata or SuperBase, but I found it much more appealing than the decidedly average wordprocessor.

Standing on its own two feet as a wordprocessor, Pen Pal would last about ten minutes. With the inclusion of so many DTP features and the database, however, SoftWood elevated Pen Pal above the status of a mere wordprocessor.

The only problem with this is that on this level Pen Pal will appeal to a rather narrowly defined set of users.

Conclusion

I would recommend Pen Pal to anyone responsible for parish newsletters, and particularly to those involved in the administration of a user group, social club, or any other organisation that needs nice graphics touches and a database facility. Give it a whirl if you fit into those categories.

If you don't fit the bill, try a program with more wordprocessing bite or go the whole way and buy a set of dedicated utilities such as Prodata and PageSetter.

Pen Pal is a product of SoftWood Inc, Post Office Box 50178, Phoenix, Arizona 85076
Available: Now
Price: £79.95 (£99.95 with 0.5 meg upgrade)
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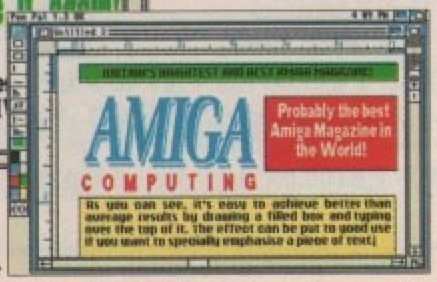
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One great thing about CanDo is that programmers can prototype their software very quickly to iron out the design problems and if necessary can have another program by INOVAtronics called Power Windows generate the code for the windows and gadgets used in the CanDo prototype and use a printout of the script as pseudo code to generate the rest of the program. Now this is software programming automation. Remember that the programs that CanDo generates are not only fully multi-tasking and highly efficient but it can also generate full run time code with no need to licence the CanDo support library from INOVAtronics.

Well there you have it. A full object based software building machine that is simple and yet extremely powerful. Hope this answers your questions; if not then give us a ring at the office.





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Two giants of the virtual world go



A sign that only exsists in the the imagination of Real 3D

HEAD to DAEH

Paul Austin finds it hard to pick the winner as Real 3D and Imagine face up to the ultimate ray tracing challenge

As promised in last month's ray tracing spectacular, this time I'm looking at the two leading lights in the field of reflection and refraction. Real 3D, as many are aware, isn't a new name in the virtual world. Nevertheless this latest incarnation boasts some dramatic improvements on its predecessor.

Imagine, like Real 3D, is another product of evolution and its ancestry can be traced back to one of the founding fathers of Amigan ray tracing, namely Turbo Silver. Real and Imagine are both state of the art for quality, ability and speed but which is best for you? Hopefully what follows will point you and your cash in the right direction for perhaps the biggest software bill you're ever likely to face.

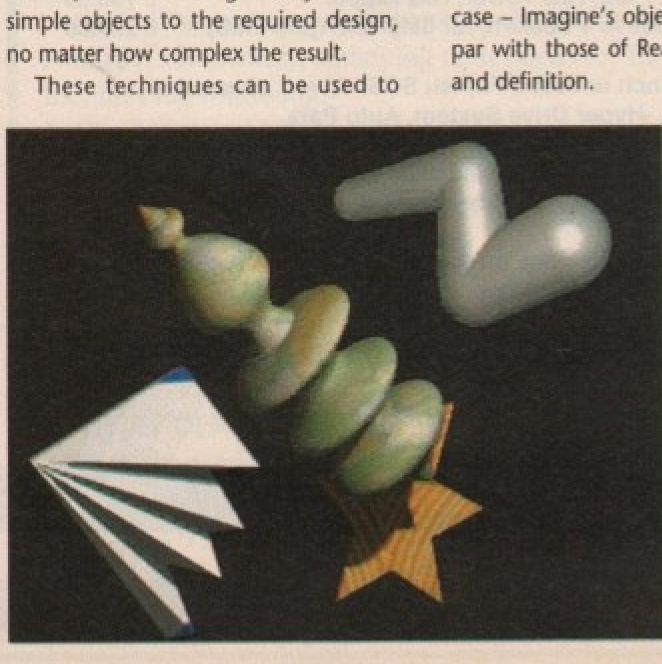
Each of the contenders has a vastly different approach to modelling. Real is a solid modeller, and as a result all its objects are combinations of primitives or "prims". This isn't to say that finished objects and images will be in any way "primitive", it refers only to the components used. A whole range of tools and techniques can be applied to stretch, extrude and generally deform simple objects to the required design, no matter how complex the result.

These techniques can be used to such a degree that prims can become unrecognisable as their former simple forms. It's fairly safe to say that any object can be created with a combination of the tools, lathes, primitives and logical operations.

Imagine's approach to the virtual world revolves entirely around surface modelling which creates a potentially infinite number of faces or facets on the surfaces of its objects. For example, a sphere within Real 3D would be one continuous mathematical plane suspended in space. Imagine however, would consider it as a floating polyhedron made up of a vast number of tiny interconnected triangular plates.



Imagine's approach would, by definition, seem prone to producing rough results or "jaggies" due to the use of flat surfaces when producing, say, a curve. In practice this isn't the case – Imagine's objects are easily on a par with those of Real both for quality and definition.



As promised in the article here's a closer look at the latest talents of Real 3D, smooth lathes, polygons the lot

The thanks for this must in part go to Imagine's phong shading routine which is responsible for the smoothing effect. Perhaps the only element which tips the quality balance slightly in favour of Real would be the inclusion of Real's eight levels of anti-aliasing, something which Imagine can't match.

You might well ask why Imagine employs surface mapping if it requires extra processing. Well, as with most things it's a case of swings and roundabouts. An object made up of multiple facets may require more attention but it's also much more flexible because of its component parts.

The spiky sphere shown in the example was produced in seconds simply by dragging several points out from the surface of the sphere. All Imagine objects are formed by stretching a skin over a framework of individual points. Each of these points can be pulled, pushed and fiddled with individually.

As a result of this flexibility, subtle forms and adjustments are easy to produce. A spiky sphere takes moments in Imagine, but the same object in Real would require the creation of a sphere and several pyramids, all of which need to be adjusted and placed. In ray tracing terms the time difference would be minimal but it's worth considering if you're working commercially.

OK, now you know how the opponents shape up, it's time to look in detail at each package's favourite punch as well as pointing out the odd weakness. First on the scales we have...

Imagine

Impulse's long-awaited sequel to Turbo Silver has finally arrived. Imagine, or Son of Silver if you prefer, makes its debut on a single disk which will automatically un-archive itself onto the drive of your choice as either a 68000 or 68030 version, or even both if you really want your money's worth.

Impulse claim that Imagine has thrown off the chains of complexity that haunted its predecessor. In the past, Turbo Silver was praised for its quality but was notorious for its hatred of humans. Is Imagine all that Turbo Silver was and more, while remaining easy to use? We shall see.

Software structure

Imagine has a very different approach to Real, not only with respect to its objects but also the environment in which they're made. It employs a modular format which divides the creation of an image into several distinct sections.

For example, a single object could be created in the forms editor then moved to the detail editor for refinements such as texture, colour and so on. If animation is required it's off to the cycle editor and finally to the stage editor for camera placement and lighting.

To render an image there's another trip to the project editor. All of these trips and detours require loading and saving both before and after you've used a particular module.



Puzzling paths

Another idiosyncracy of Imagine is its insistence on ridiculously complex and convoluted file paths. Each project has its own directory and then a separate sub-directory with individual directories for objects and scenes and so on. If you're one of the lucky few with a hard drive all this module swapping and path searching isn't really a problem but for mere mortals working on floppies it's a bore.

And so to the manuals. At first glance the reference and tutorial provided seemed to support Impulse's claim that Imagine is indeed easy to grasp. The main reason for this assumption came from their less than weighty appearance. After a little experimentation it soon became clear that they were quite light on detail and on several occasions left me stranded, especially during the tutorial.

The detail editor goes a long way towards making up for the shortcomings of the manuals. It's a real joy to use, especially if you're the lucky owner of an Amiga 3000 or a flicker-fixed 2000 – the combination of the smooth and stylish four window display plus rock solid interlace is wonderful.

Manipulation and altering of objects is a little tricky at first but with practice you soon master the rather delicate art of selecting objects by either point, face or edge. The ability to zoom in on individual windows is particularly handy for fine-tuning your creations.

The perspective or fourth view is another big plus as it gives you a constant reminder of exactly what's going on in your image. The option to view in either solid or shaded modes also does wonders for your perception of what's what.

Anyone who's worked with complex wireframes will certainly appreciate this particular addition. You'll be pleased to know that it has no effect on the other screens when updating, so you can work on obliviously and simply enjoy the benefit of a constant reminder.

As with Real, primitives are available but in considerably fewer numbers and variety. All the essentials are there however, – spheres, tubes, and so on.

The program employs boolean or logical operators which allow prims and other forms to be used as tools on objects – cutting, drilling and so on. Another powerful option is the magnetic tool which boasts definable attraction and repulsion. As a result surfaces can be be drawn up or forced down uniformly.

Special mould and skin functions allow you to extrude shapes in some very strange ways and these can then be draped over surfaces or basic structural skeletons.

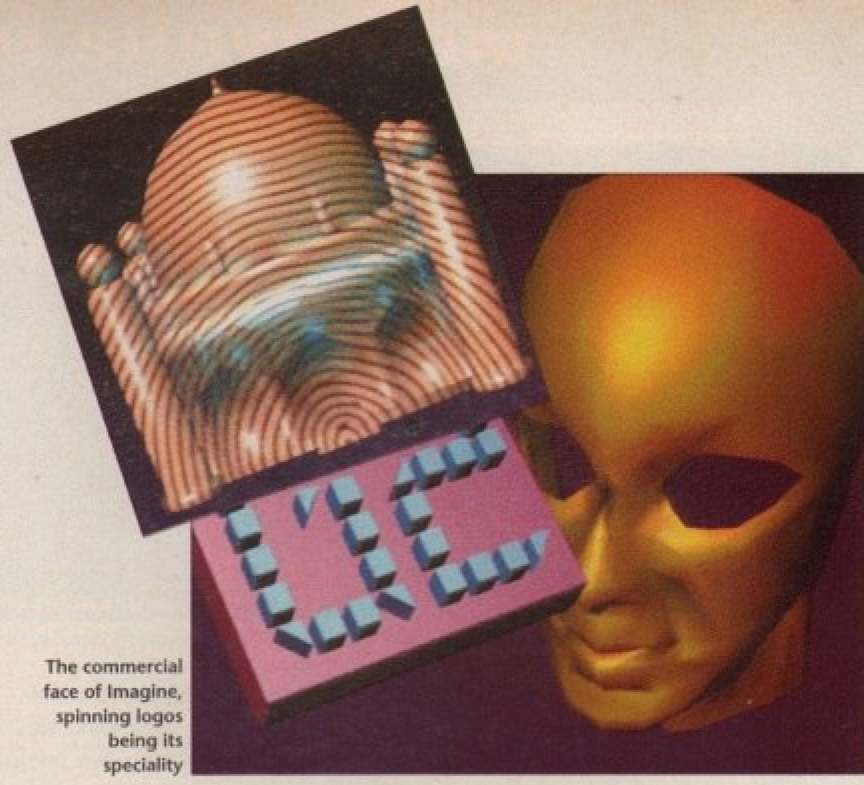
It's also here that the attributes for all your creations are defined. This is another element of Imagine's repertoire that's been very well thought out. For example, it's possible to combine coded textures such as "Wood" and "Disturb" while mixing IFF textures within the same object's surface.

Of other editors

The forms editor is something of a strange beast and I must admit it's an acquired taste. I found it a little difficult to come to terms with, but having said that, others rave about its power and abilities – no doubt with a little more time I might agree.

In theory, the forms editor allows you to create organic and natural shapes easily and quickly by dragging and manipulating groups of points. With practice, almost any kind of form can be realised, but in my case it was definitely a case of luck rather than good management.

The stage editor is the part of the program where most of the animation and all of the object positioning is determined and set. The combination of the familiar four-way editing screen and an extensive staging sheet allow the user to choreograph complex motions for all of the elements within the defined scene. There are also predefined actions like explode and grow which can be applied to any object within your virtual creation. The staging sheet is reminiscent of a professional animation sheet with a strong cartoon and movie influence – objects are referred to as "actors" and playback as "action".



The commercial face of Imagine, spinning logos being its speciality

Another impressive talent of Imagine is its ability to *morph* objects. This simply means that elements within an animation can be transformed from, let's say, a sphere to a cube. This is a strong point as such things would be a nightmare to attempt on Imagine's opponent.

But it's the animation element which is the program's real strength. It has talents and techniques that Real 3D simply can't match.

Again, it's far from simple but with patience stunning results are ready and waiting. Having said that it's worth remembering that ray-traced animations are strictly for the power users – one meg simply won't do and without acceleration a single anim may take a week to render.

Real 3D

For those unfamiliar with Real 3D a basic outline of its approach to the virtual world is in order. The program consists of three elements, each adding its individual talents to the finished masterpiece, whether that be a single image or an entire animation.

The most heavily used element of the Real threesome has to be the editor screen. This uses the now common orthographic or tri-view screen format which displays three dimensional space from separate elevations.

Controlling what appears in your imaginary world is achieved using a variety of pull-downs which give instant access to everything you'll need, ranging from the primitives or prims, to the most complex boolean operations. The latest version boasts some new point-and-click controls which make prim selection even easier.

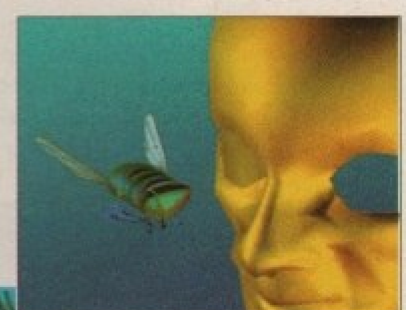
As well as placing and manipulating individuals, hierachical objects are available thanks to a simple process which links individual prims to form complex objects. These are then considered to be individuals themselves and as a ➤

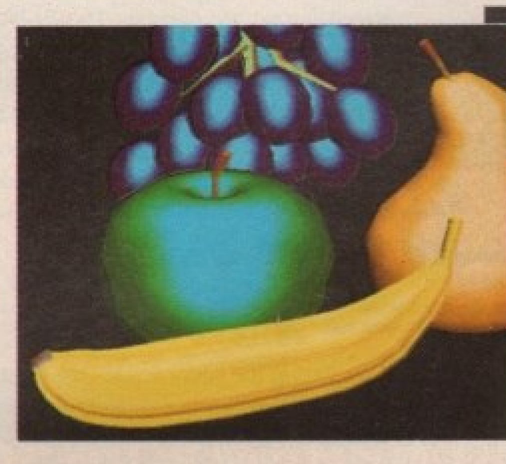
Cycling about

Imagine's cycle editor is unique to Imagine and can be a little confusing. It's used to create animated objects which can then be imported into the stage editor.

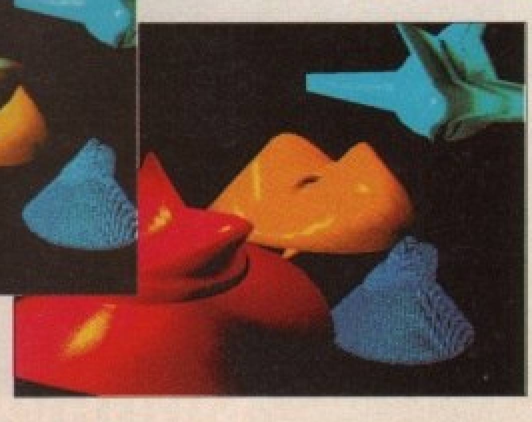
By sculpting an entire figure and then assigning object filenames to the structure's bones, a stand-alone animated character can be produced using key framing actions. When finished it's off to the stage editor for tweaking and further animation.

To say Imagine's rendering section is very comprehensive would be an understatement. It outputs any standard Amiga resolution as well as 24-bit. The output is excellent and the quality of rendering

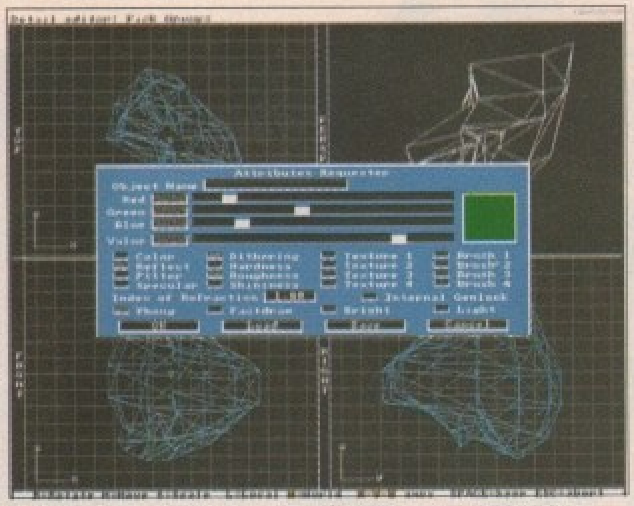




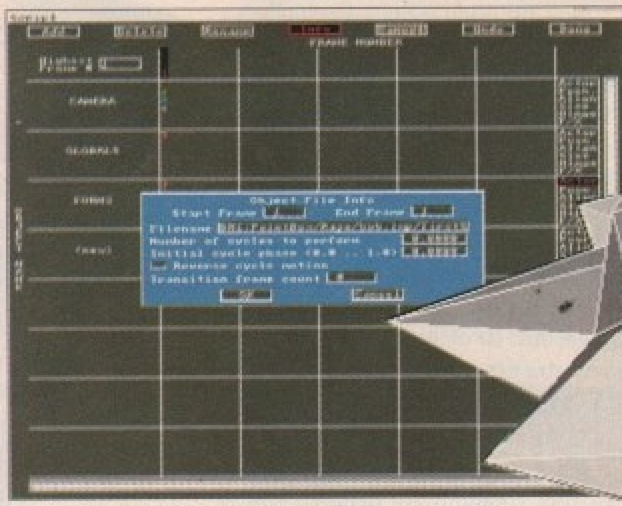




A quick glance at some of imagine's more organic masterpieces



Picking points and adding attributes within Imagine's Detail Editor



Imagine's complex but powerful animation sheet in action.

result, can be moved, rotated, stretched and shrunk in the same way as a standard prim.

The huge range of tools and prims make creation of objects simple and speedy. All the object modelling, manipulation and scene setting goes on here plus the addition of textures which can vary from imported IFF wraps straight from your favourite paint package to bumpmapping a knobbly organic masterpiece.

As you might expect, a complete range of boolean operations and definable macros help to make Real the easiest modelling environment on the market.

The only moan is the lack of booleans or macros within the beginner's version. This is no doubt a ploy to encourage upgrades, but to be honest it seems a little mean on Activa's part – although they insist it's due purely to memory requirements.

Wireframe

This is perhaps the most user friendly element of the program as it allows you to move at will around your creation, zooming in and out, rotating and turning with a simple drag and a click. When you're happy with the camera angle a single tap on the rodent has it ready to render.

The ability to fly around your creation opens a whole range of surprising angles and alternatives that may never have occurred to you otherwise. Besides setting the scene, the wireframe is also responsible for previewing animation paths and designing new ones manually.

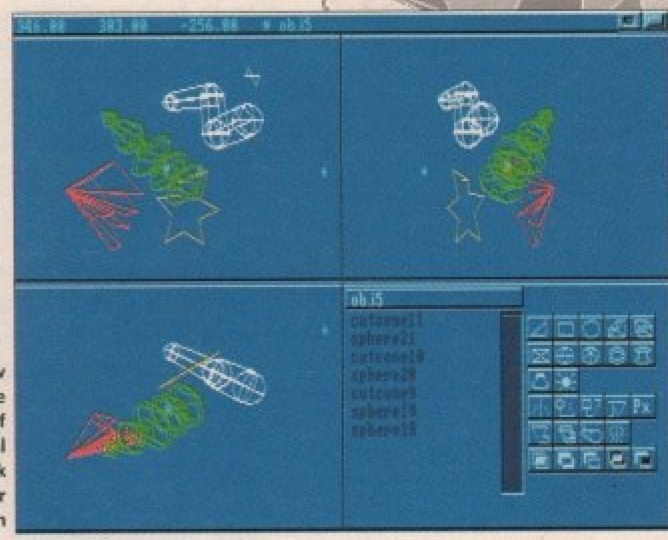
Simple paths can be assigned to objects in the editor screen but the fine-tuning is all done in the wireframe, and additions such as manually designed camera paths are easily created in swift succession, simply by moving from one to the next, hitting Record as the required position is reached.

Another new addition to Real 1.3 is the ability to animate boxes rather than the entire image. This is a real bonus if you want to render long animations quickly and opens up animation to those of us with less than a massive amount of available memory.

In general, the animation controls are far simpler than Imagine's but the results are still very impressive. Imagine's approach is much more theatrical and, of course, has the added bonus of morphing. Morphing is planned for Real but at the moment is stuck firmly to the drawing board.

If you're not desperate for ultra-complex animation, Real should be more than adequate. Its most appealing feature is the creation of animation paths that consist simply of selecting an object, drawing a line and watching as the object dutifully follows your command, automatically recording each frame in succession.

Orbits and observer positions are all definable and can be altered within the animation for added excitement.



The now familiar three way view of the virtual world thank Real's Editor screen

Rendering control

As with most elements of Real, the rendering screen at first appears relatively unchanged but, in fact, it's here that many of the new enhancements appear. For example, extra 24-bit rendering formats such as Targa and IFF 24 and, of course, the highly impressive eight-level anti-aliasing control.

This new feature adds considerably to rendering times if used to the full, but with results which challenge the output of frame buffers it's worth the wait.

The rendering controls are essentially simple, being a matter of clicking on buttons or dragging faders to set the desired combination of effects, the range and variety of which only Imagine can match.

In Real's Turbo version every combination of resolution, light intensity and screen format are possible. The 24-bit formats herald the next generation of images waiting to appear, thanks to the increasing number of 24-bit boards. As with the editor there's a small blot on Real's copy book, namely the exclusion of the 24-bit options from the beginner's version.

What's new?

If we start at the editor screen, the most obvious difference is the bank of prim selection buttons which make modelling blisteringly fast. Hidden in the bank of buttons are a few new faces such as the smooth lathe tool which you can see in action along with the other new prim controls in the example.

There are two new tools in addition to the lathe. The first is the polygon tool which allows you to create plain polygons of any shape. The second is the more complex polyhedron tool which creates a three dimensional object using polygons as components.

The final new face is the conical tube which creates objects consisting of spheres of varying sizes joined by smooth tubes with either expanding or contracting radii. Ideal for fingers, limbs and general body building.

The next big change comes in the material device which has a whole range of new features, such as turbidity which defines the density of the material itself. So, for example, it's possible to combine turbidity with the option to smooth the material's boundaries to create a cloud of fog.

Specularity control has been added plus some handy percentage displays and a material view option. Animators will no doubt rave about the inclusion of textured animation support which makes it possible to create chameleon-



Real's bump mapping in action. Created in seconds in the all new material device

like effects on objects within animations – a big improvement.

Mapping, as the sign shows, is big business and as a result, four new options have been added. The first is clip mapping which cuts surfaces. So if, say, a texture is mapped onto an object, any parts left uncovered are discarded.

Next there is the bumpmapping option which allows the surface of an object to be covered with countless bumps and abrasions of definable height. Once again the only real challenger in this area is Imagine, both programs being particularly talented at adding organic feel to the virtual world.

Lastly we have the standard colour and special mapping techniques. Colour mapping simply defines object colour, whereas special mapping allows you to create shiny elements on a matt surface by relating various colours within it to either transparency or brilliance.

As well as these various modelling enhancements there are some new animation additions such as direction control and the new edit orbit option. Throughout the program various additions have appeared, creases have been ironed out and keyboard short-cuts applied. In short, Real's new look is more a complete facelift than a simple nose job.

And finally

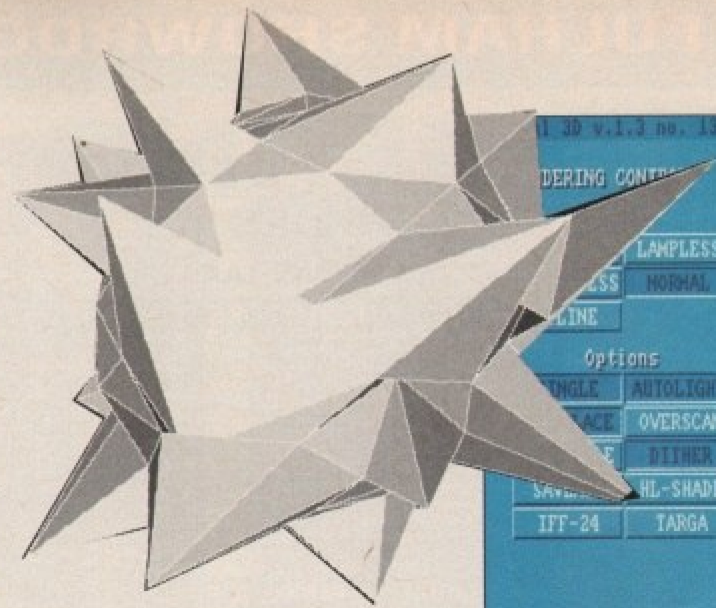
This article has been billed as a championship match between the two contenders for the ray tracing crown, so I suppose there has to be a decision. But I'm merely the referee so I'm afraid the final points decision is down to you.

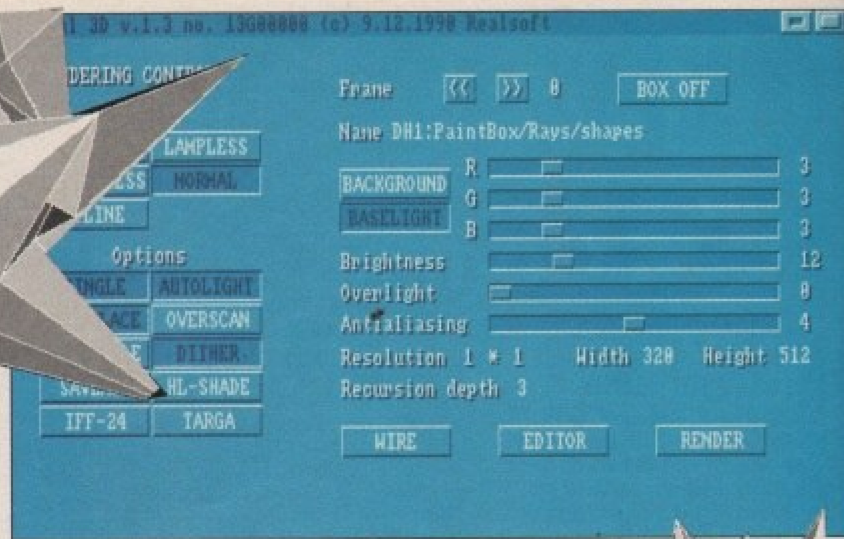
Having said that there are few points worth remembering. Firstly, Real comes in various formats with the Turbo version the only one to have a full complement of abilities. Imagine, however, is complete whether run on a standard 68000 or a Ferrari-like 68030 or 68020. This is definitely Imagine's biggest punch.

Real in any of its forms is a dream to use, with everything close at hand and all its talents merely a mouse click away. The sheer speed and ease of use are marvellous and show all its competitors to be sadly lacking in the user friendly department.

As far as finished products are concerned there's little to choose between the two, with perhaps Real scoring on image quality and Imagine hitting back with its superb, if slightly complex, animation options.

Imagine claims to have thrown off the chains of Turbo Silver's complexity. I don't agree, but with practice the results speak for themselves. Real on the other hand is a dream to use but a nightmare to pay for and Activa's tactics for potential upgrades seem a little below the belt. Who wins the fight and your money is up to you...





Real's all new rendering screen, with a whole range of extra options

Product information

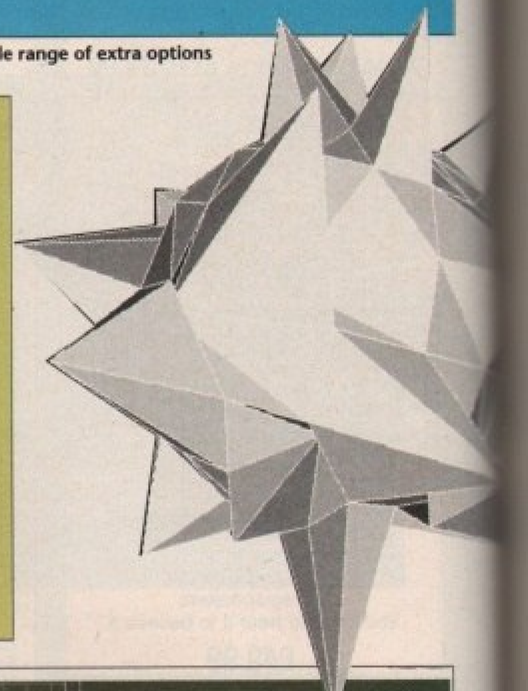
Imagine £223.25 incl vat

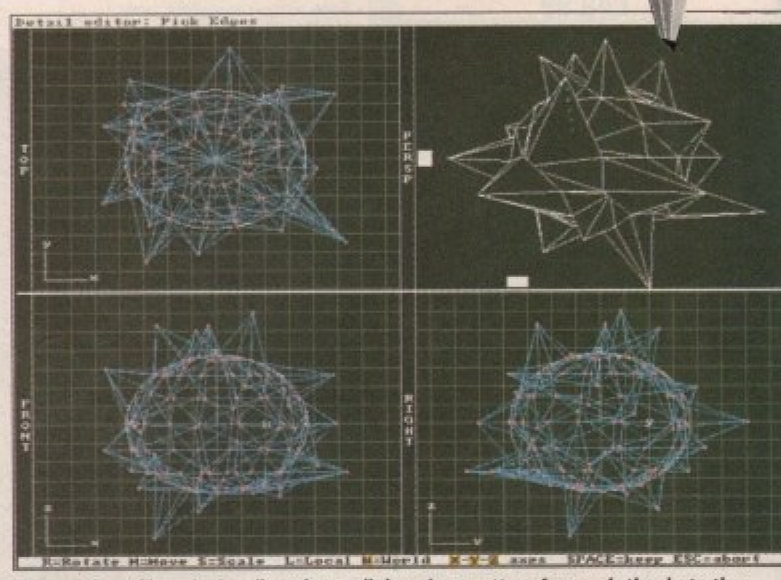
Real 1.3 Beginners version £142.00 incl vat

Real 1.3 Turbo version £409.00 incl vat

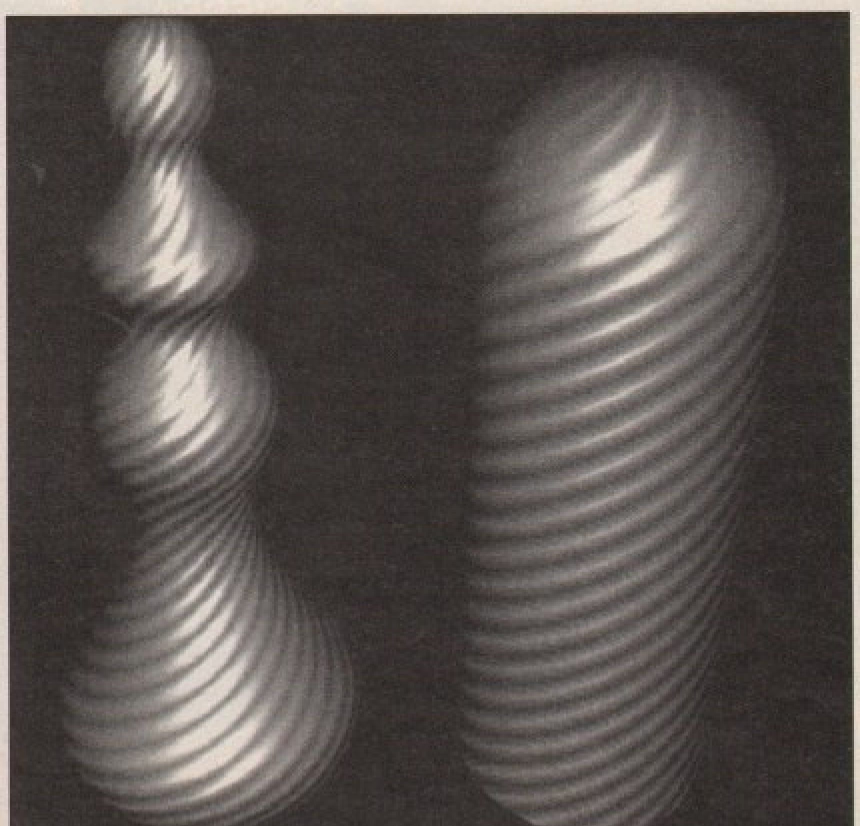
Supplier: Alternative Image
6 Lothair road
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LE2 7QB

Tel: 0533 440041
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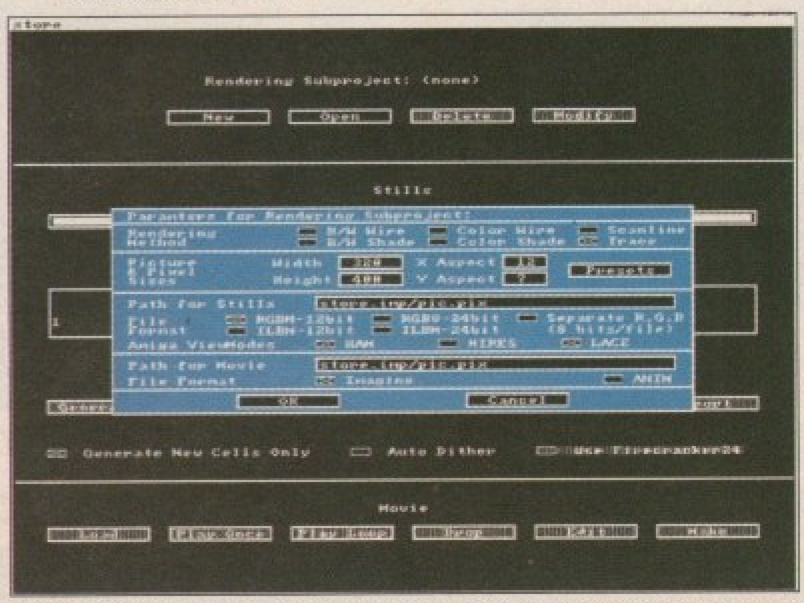




The creation of imagine's spiky sphere, all done in a matter of seconds thanks to the flexibility of point selection



A commercial example of Real's gray scale format in action



Selecting the format for your masterpiece is simple but you must be sure all the component parts are where they should be

In the Gallery



Girl Back by C P McGowan

You can't fail to appreciate the influence of ray tracing on each of this month's gallery selections. If you want to find out which software tools are used to create these beautiful artworks, take a look at the clash of the ray tracing giants elsewhere in this issue. But ray tracing is by no means all we're after, so keep those artistic submissions coming in.

As usual, this month's winner receives a full colour photographic image of their masterpiece, complete with frame, ready to hang on the wall of their choice!

Entrants in next month's Gallery have an added incentive. A brand new copy of SpectraColor, the only HAM paint and animation package capable of the 4096 colours will go to the winning artist. And if that little lot doesn't tempt you to put mouse to mat, nothing will...



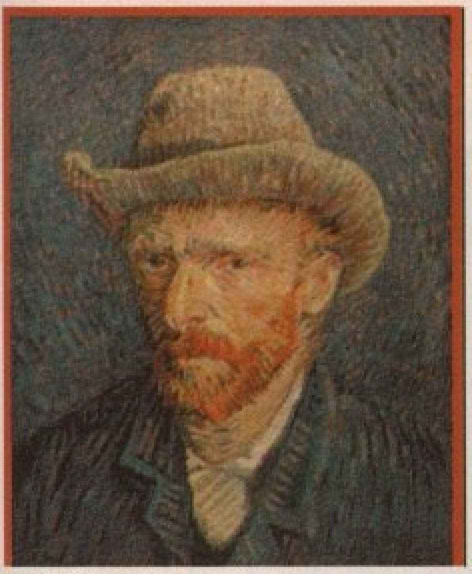
Sykler by Bjarne Melsom



Norton by A R Meredith

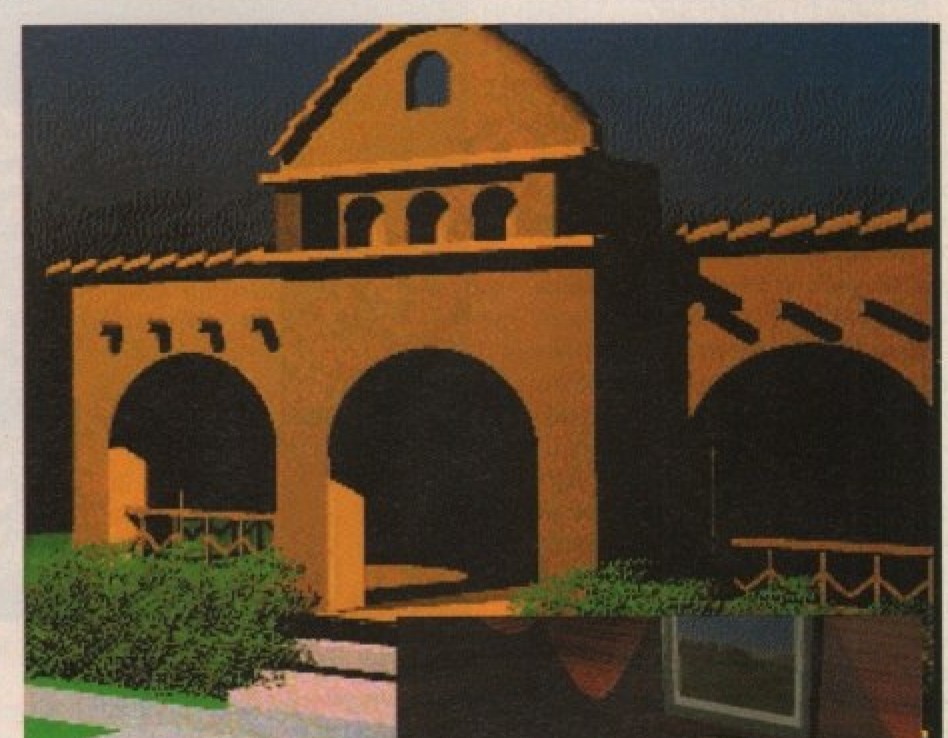


Stalin by A R Meredith



Van Gogh











A slection of ray tracing classics from the nordic artisan Bjarne Melsom

Deluxe Paint goes fourth

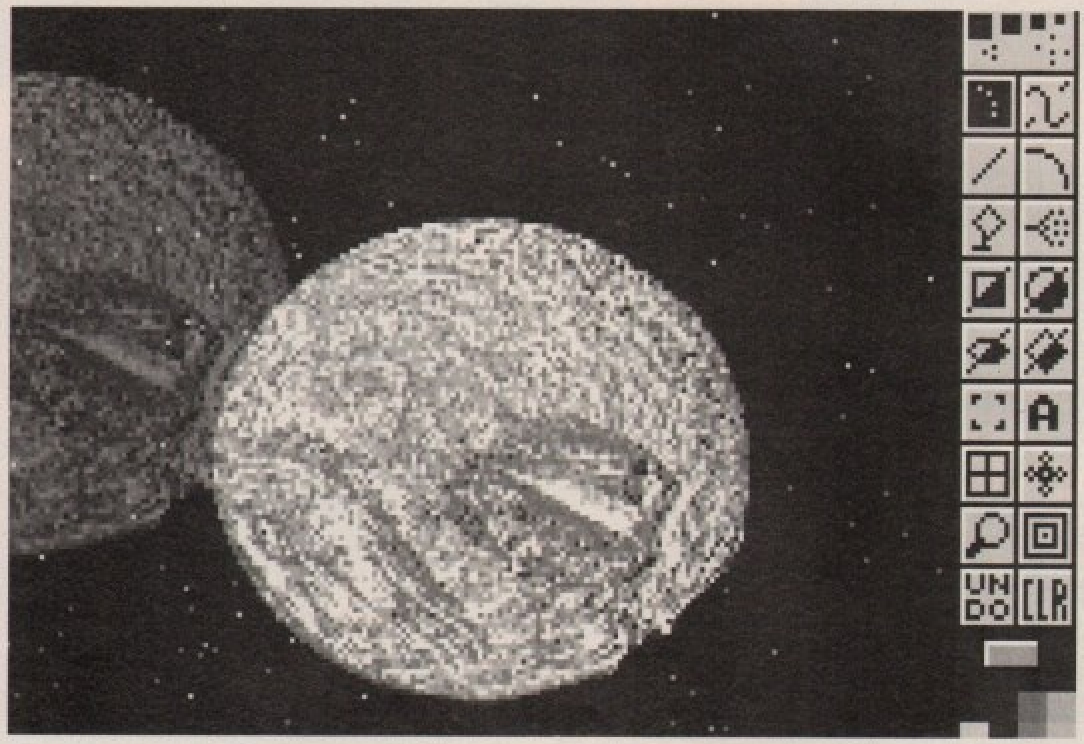
No matter how you slice it, DeluxePaint is much better with HAM, as Simon Walker discovered when he donned his artist's smock to check out version IV

Just when you thought DeluxePaint was as good as it could get, Electronic Arts announces yet another upgrade. The program that revolutionized computer art is back in a new incarnation, sporting a much larger palette, new animation and drawing features, and an improved user interface.

If you're a serious Amiga artist, you probably own two paint programs – DeluxePaint for basic painting and work in high-resolution, and a second paint program such as DigiPaint 3 or Photon Paint for work in the 4096-colour HAM mode.

Many artists preferred to use DeluxePaint for most of their work, using the HAM programs only to add extra colours or special effects. Well, now's the time to sell that HAM paint program to a friend and use the cash to upgrade to DeluxePaint IV.

With support for HAM pictures and animations, as well as a suite of new special effects, DPaint IV is all the paint program any Amiga user will need.



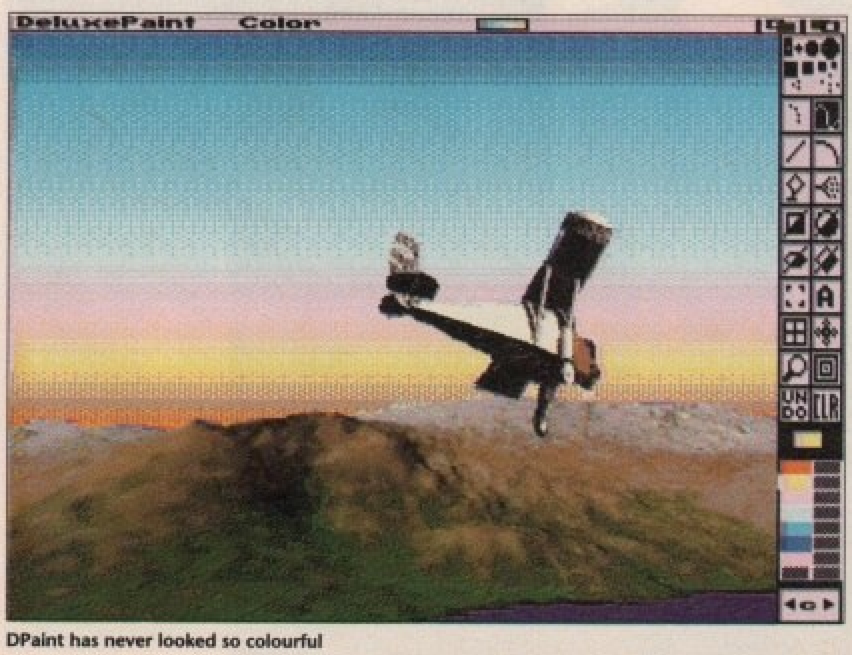
A new embossed look for DPaint tool box

A Familiar (Inter)Face

At first glance, DPaint IV doesn't look any different from earlier versions of the program. However, upon closer examination, you'll notice it now has a 3-D look and feel; the flat, beige icons of DPaint III have been replaced by embossed grey equivalents. While the interface is deceptively familiar, the underlying program has received a major facelift.

The first indication that this isn't plain old DPaint any more comes when you first launch the program, when you're asked which resolution you wish to work in. Along with the familiar choices of 2-64 colours, another gadget offers you the opportunity to work in HAM mode.

Another obvious addition is the selectable degree of overscan – you can choose STD overscan (704x566 in Hi-Res), or MAX overscan for video applications (736x580). All the other choices are carried over from DPaint III, including the ability to work in PAL or NTSC resolutions, and to load only portions of the program, saving memory on Amigas without much ram.



DPaint has never looked so colourful

An Order of HAM, Please

The most exciting addition to DPaint IV is support for HAM mode. No longer do you have to carefully pick, choose and tweak your palette colours. The Amiga's entire 4096-colour palette is available for your picture.

If you haven't worked with HAM mode before, you'll be in for a mild surprise when you add the 17th colour to your picture. In HAM (Hold And Modify) mode, you have 16 base colours, and additional colours are created by modifying the base colours.

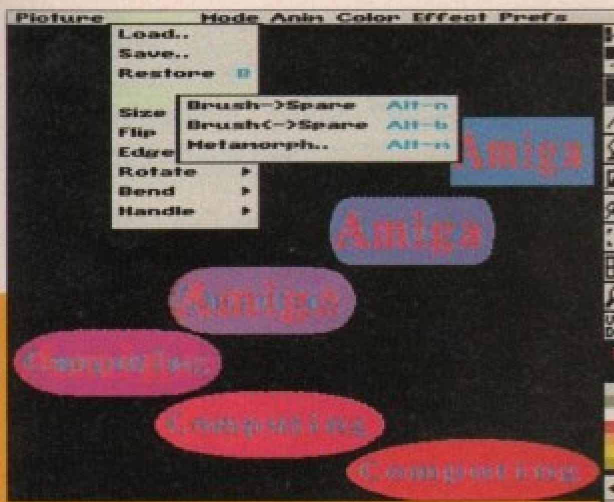
Each pixel can be modified in only one of the six bit-planes used in HAM mode, so it can take up to three pixels of intermediate colour across the screen to reach a target colour. You may draw what you hope will be an orange pixel and end up with a grey one instead. This can cause the effect known as "HAM fringing" that you see in some digitized pictures.

By carefully choosing the initial 16 colours and avoiding single-pixel-width vertical lines, you should be able to avoid most fringing problems.

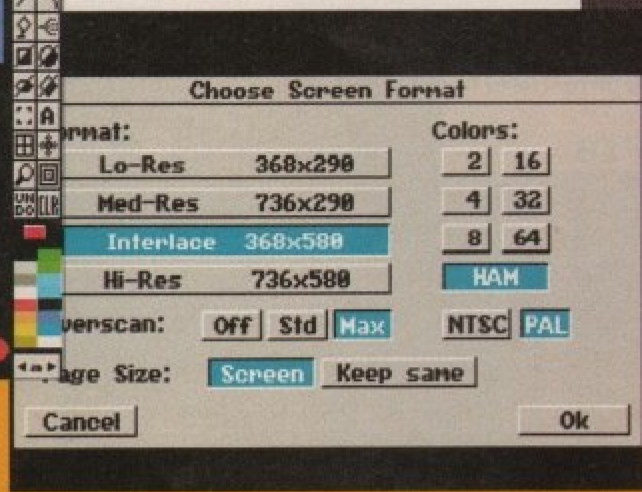
Working with all the extra colours available in HAM mode is made simple by DPaint's completely revamped palette system. In 2-64 colour graphics modes, you choose colours from a palette box in the lower left corner of the screen, just as in earlier versions.

In HAM mode, you're initially presented with a box containing the 16 base colours. Below this box is a gadget that allows you to scroll through an additional 15 sets of 16 colours, presenting you with a total of 256 readily-available colour choices. (This palette system is based on the one used in the VGA DeluxePaint Animation on MS-DOS machines, which explains the choice of 256 colours.)

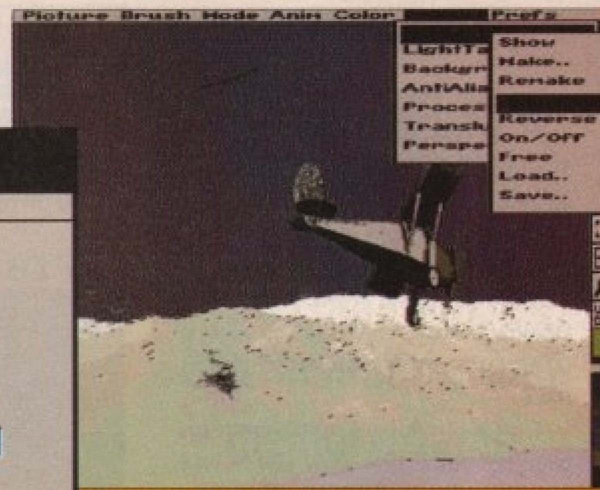
If you need to change a colour, or create a new one, hit P to bring up the palette requester. Instead of the familiar onscreen box from earlier versions of DPaint, though, you're



Diffucult to show in print, but DPaint IV has a powerful metamorph facility



Pick a mode, any mode



Improved stencils

instead greeted by a short, wide palette requester that pops up at the bottom of the screen.

At the top of this palette requester are 32 colour boxes, 16 of which are defined when you first enter HAM mode. Any of these 16 can be changed using the familiar RGB and HSV sliders, or you can choose one of the 16 empty boxes and define a colour for it.

A set of scroll arrows next to the palette colours lets you move through the other 256 definable colours. The palette requester still has the familiar DPaint III functions, such as spread, exchange and copy. Colour cycling and range functions have been moved to the new Ranges requester.

Next to the slider gadgets you'll notice a large, rectangular box. You now have a new way to create colours – you can mix them just as an artist does with a liquid paint palette. Just grab a brush and a colour and stamp a few swatches of "paint" in the mixer area. Then change to a new colour and smear it into the mixer area.

As the two colours meet, you'll notice they begin to blend, creating new shades from the mixture. Any number of colours can be mixed in this area. When you've created the shade you want, just click in an empty palette box (or one you're redefining), click the Pick gadget and click your new colour. That colour is now available to paint with.



Set your ranges in style

You aren't limited to 256 colours, either. Once a colour has been drawn on a HAM screen, you can change that colour in the palette box without affecting the onscreen colours (except for the 16 base palette colours). So you can paint a picture using 256 colours, then go back and create additional shades for highlighting or 3-D effects.

Handling huge palettes of colour is made easier with the Colour Set Load/Save menu choices. You can save an entire 256 colour palette, or just select sections of the palette to store in a file. These can then be loaded for use in another picture, or appended to your current palette. You might save a set of greens useful for landscapes in one Colour Set file, for example, and a set of blues used to draw sky scenery in another.

Home on the Range

DeluxePaint's Range system, used in colour cycling and multi-colour flood fills, has been completely revamped. The new setup is easier to use, yet much more flexible.

When you choose Ranges from the new Color menu, a quarter-height screen pops up at the bottom of your current screen. Using this requester, you can define up to eight different colour ranges for fills and colour cycling. A slider bar lets you choose which of the eight ranges you wish to work with. Next to that is a bar which allows you to add up to 32 colours to the range you're working with. Just click once on a colour in the palette at the bottom of the screen, then click in one of the 32 slots on the colour bar.

If you leave a few empty slots between each colour, DPaint will automatically generate the intermediate shades between the two colours. If you're working in HAM mode, the actual intermediate shades will be used when you use the range in your drawing for flood fills.

If you're using 2-64 colours, the program will dither between the colours, like in earlier versions. DPaint IV now gives you a choice of two styles of dithering: Random, as in earlier version of DPaint, or Ordered, which gives you a more regular, consistent dithering style.

Random looks better when creating "natural" scenes, such as a flood-filled sky, but Ordered dithering tends to look better when drawing artificial objects, such as the silver skin of a jet aircraft.

Colour cycling is more flexible now, as the colours you choose to cycle no longer need to be adjacent in the palette box.

You can choose to cycle colours 4, 5, 10, and 23, for instance. A feature unique to DPaint IV is the ability to cycle colours in HAM mode, although you may only cycle the 16 primary palette colours. Cycling rate, as well as the degree of dithering, are easily set using slider gadgets.

Khafka Would Be Proud

If I had to single one DPaint IV feature out as being the most fun to play with, it's the new Metamorph option under the Brush menu. With this, you can literally change one bitmapped brush into another over a series of frames.

If you're familiar with the "tweening" capabilities in some structured-graphics animation programs, imagine being able to make such transformations with a bitmapped brush. Now, instead of just changing a circle into a square, you can change Margaret Thatcher into Ronald Reagan!

Metamorph couldn't be easier to use. Just pick up a brush from your picture and copy it to DPaint IV's new Spare Brush Buffer. Then pick up the brush that you want the first brush to change into and select Metamorph from the Brush/Spare menu. Type in the number of frames you want the transformation to take place over, and DPaint will begin the alteration.

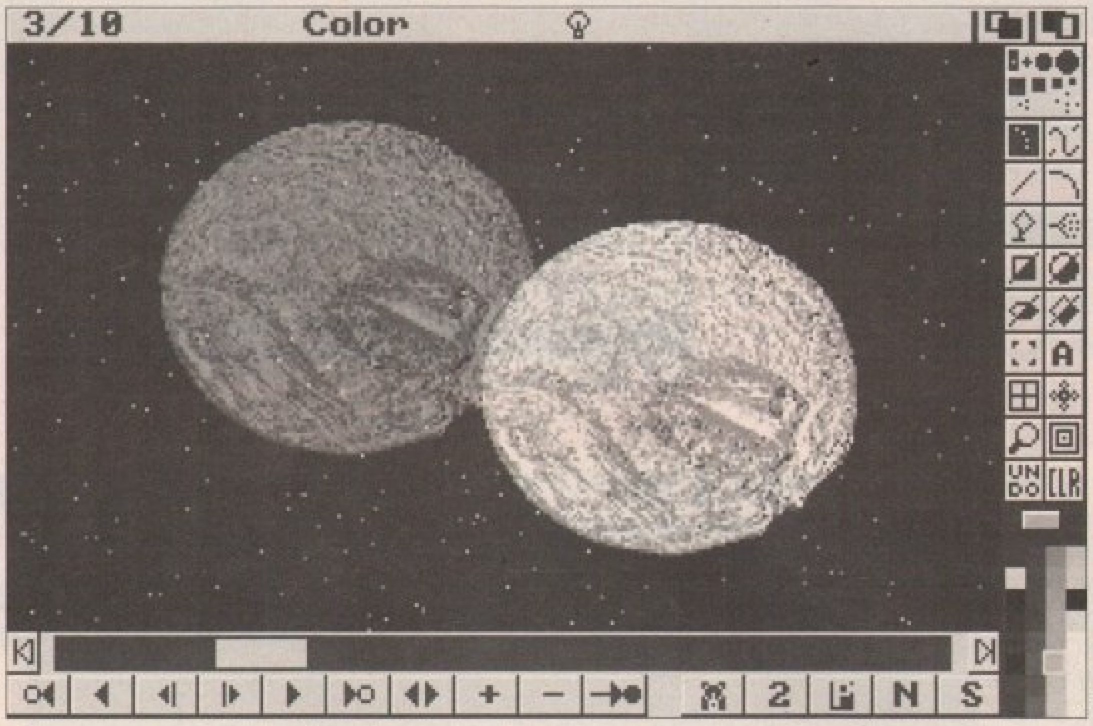
A minute or so later (depending on the size of the brush and the number of frames you've chosen), Dpaint will have created an animbrush that cycles from your first brush to the second, slowly changing over a series of frames.

You can create some spectacular effects with this feature. One of the neatest I found was changing one word into another. For instance, you could create one brush with the word "Drugs" in blue. Then a second containing the words "Just say NO!" in red. Tell it to metamorph over a period of 10 frames and the result, once you've stamped the brush down into an animation, is a spectacular, eye catching effect – the first word appears, then begins to break up into chunks of pixels which swirl around the screen and gradually begin to change to a reddish colour, eventually reforming into the second set of words.

It's a lot more exciting than a static title screen, wouldn't you say? Of course, you can also create fun effects, such as taking a digitized picture of Betty Boo and morphing it into the words "Doin' the Doo."



Getting the right colour couldn't be easier



Animation control is sophisticated yet simple

A Transparent Ploy

The folks at EA could have stopped at adding HAM graphics to DPaint IV and I doubt anyone would have complained. However, developers Lee Taraṇ and Steve Shaw (who built DPaint IV from Dan Silva's original DPaint III code) didn't call a halt there.

They also added a number of new painting modes that allow you to take full advantage of DPaint IV's enormous palette.

The feature with the biggest "this is cool" value is Translucency. With this turned on, you can set a degree of transparency for your current custom or built-in brush, ranging from 0 to 100 per cent. At a setting of about 50 per cent, you can create nice effects such as semi-transparent titles stamped on your artwork.

At high translucency settings, such as 90%, you can stamp down nearly transparent brushes for a ghostly, almost subliminal effect. It's also useful for simulating a watercolour effect in freehand drawing.

You can alter colours already on the screen as well. Under the Process menu are adjustments for altering Hue, Tint, and Value. By turning one of these modes on, you can colourize a picture, shade it in or lighten up darker areas, all without losing any detail.

There's a new painting mode available as well. Along with old favourites like Colour, Smear, Cycle, and Smooth (which incidentally works wonders in HAM mode), you can now choose Mix.

In this mode, your brush acts just like it would in the Palette requester's mixer – you can blend colours onscreen to create new ones, but you have the entire screen at your disposal. You can use this with the Pick option to create new colours, or actually integrate the mixing into your picture, to create smooth demarcations between colour changes.

Let There Be Light

Like its predecessor, DPaint IV supports both full-screen animation and animbrushes. Now that the program will read and write HAM animations, though, it's much more useful as a post-production tool for use with other animation packages. (How many of us were using ray-tracers to create 32-colour animations?)

Moving through your animation is simplified with the addition of an Animation Control Panel, which sits at the bottom of the screen and can be toggled on and off.

If you've ever used a VCR remote-control, you have all the knowledge you need to operate this panel. Buttons allow you to move to the first or last frame of the animation, move forward or backward through it, play it, and add and delete frames. Another set of gadgets to the right of the movement buttons controls DPaint IV's new LightTable feature.

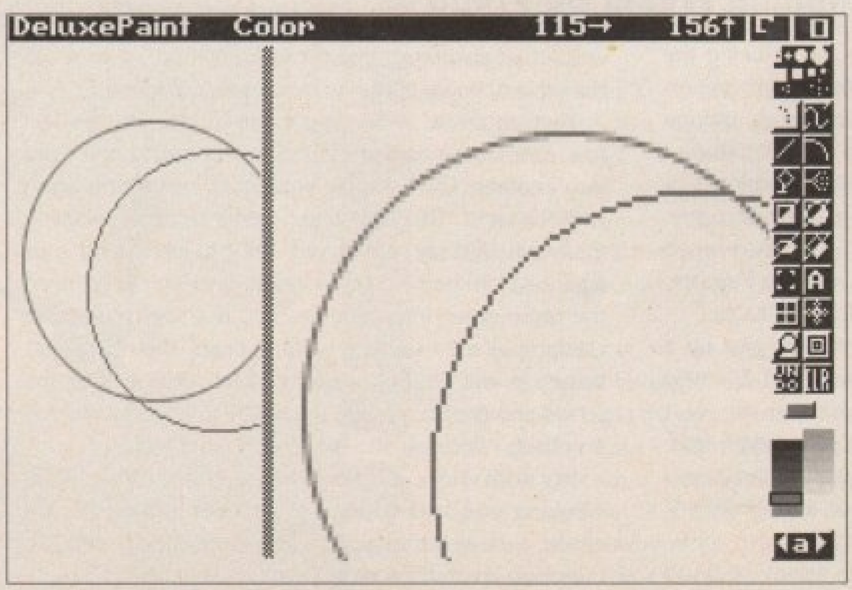
LightTable is a feature similar to the onionskin capability found in Disney's The Animation Studio. With the LightTable on, you see a dimmed representation of preceding or following frames overlaid on your picture, allowing you to see objects' movement in each frame, and to use moving objects as reference points when placing new objects in your animation.

You can choose to see ghosted representations of the previous frame, the frame before that, or the next frame; or turn them all on at once to get a better perception of your object's direction of motion. Disney's animation program supports the onionskin capability only in a black and white mode, while DPaint IV supports it in full colour. This is a mixed blessing, though.

The LightTable is most effective when your picture has a clean background, and where you have a number of darker shades in your picture that you're not using.

If you've got a very busy picture with a digitized background, using all the colours available, you may not be able to make out much of the previous frame. I got the best results working in 32 or 64 colours, using lighter shades.

You can always use the LightTable to create your animated objects on a black screen, then pick up the entire screen as an animbrush and stamp it down on a more complex background later.



DPaints Light table, similar, to Disney,s onionskin

Wrapping Up

There are many more new or improved features in Dpaint IV, too many to go into in a brief magazine review. Many older features just work better.

For instance, there are a number of new options for wrapping objects onto brushes. You can now choose a direction for a light source, for instance, when mapping a picture onto a circle. With this option you can create a true 3-D sphere effect.

Also, the Stencil feature has been much improved. If you're like me, you never used it much because of the complexity of choosing only certain colours to represent the stencil.

Now, you can just paint the stencil on the screen, using any of the painting tools. Create impressive effects using circles and polygons as stencils, or just use the filled freehand drawing tool to mark off a certain area to be "paint-proof".

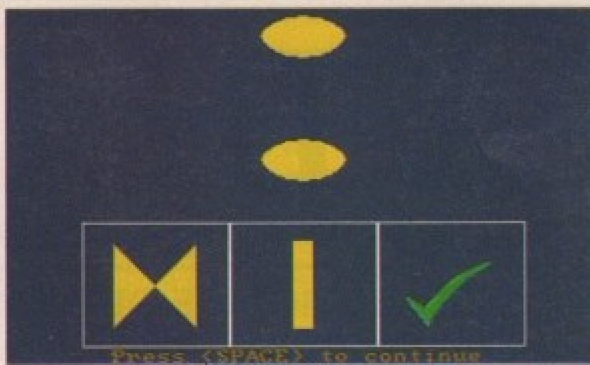
Electronic Arts has done an incredible job with DeluxePaint IV. New features abound, and old features are improved. There's not much to complain about, save perhaps that some operations in HAM mode are a bit slow on a stock Amiga.

DeluxePaint IV once again continues EA's tradition of breaking new ground in Amiga paint programs. About the only feature I can see adding now would be support for the new 24-bit graphics boards now appearing for the Amiga.

DeluxePaint IV has the features to satisfy even the most demanding Amiga artists – at least, until the release of DeluxePaint V.

Mix and Match with Maggie

Scetlander's pre-reading age educational program deals with recognition, discrimination and memory. Sarah Williams has been matching shapes and spotting the odd-ones-out



Odd One Out, a simple challenge but a learning experience



Variety is the spice of life and happens to be a great way to keep the interest of a toddler

When I first played one of the games in Scetlander's new educational package I must confess I didn't find it very exciting. But if you can put yourself in the place of the under-fives (and in my case that's only eight years back) the games take on a whole new significance.

In case you haven't made Maggie's acquaintance, have you ever seen the cartoon The Family Ness? Well, Maggie looks very similar to one of The Family Ness. She is green, wears a tartan hat and has a body which goes up and down like a rollercoaster.

Scetlander claim that everyone loves the way Maggie speaks. However, this seems strange because although Maggie speaks clearly, she doesn't use her voice very often.

The games

The three games are Two of a Kind, Odd One Out and Forget-me-not. A clock and calendar are also included in the package.

After selecting any of the three games you are presented with an options screen. Here you choose your method of play by selecting either Pictures, Shapes, Same (in which each picture is the same but in a different position) Large (capital letters) Small (small letters) or Numbers.

In Two of a Kind a picture is displayed at the top of the screen. You then select which one out of the four in a box at the bottom of the screen is the same. To select, press the spacebar when the pointing hand, which moves of its own accord, is pointing at your desired answer.

If you are correct a tick will appear in the box. If you're wrong a cross will appear and you can try again. And if you're still struggling after the third attempt, Maggie will help you.

When you have chosen your method of gameplay for Odd One Out from the options screen, you have to identify the odd picture, shape, letter or number. To select, press the spacebar when the pointer is at the right answer.

To play Forget-me-not you again choose what you want to play with from the options screen. In this game pictures, shapes, letters and numbers are flashed onscreen and the correct match must be identified. This game, as the name suggests, calls upon and hopefully develops memory skills.

Clock and calendar

A 12 or 24-hour clock and a calendar are displayed on your screen. Pressing the tab key alternates between 12 and 24-hour modes. The calendar shows the month and date.

There's nothing else to the clock and calendar and it does seem rather a wasted opportunity to introduce some kind of educational activity relating to dates and times.

Mix or match?

This educational pack is quite reasonable although some things could be improved. The games need to be made just that little bit more interesting.

Music, and Maggie's voice, for example, could be used more often. Maggie is quite an appealing character and she, and the ease with which the program can be configured to suit any tiny user – including those with learning difficulties – are two of the best features.

Finally, the way in which scoring is handled is good for young children. Smiling faces appear for correct answers and unhappy faces for incorrect ones.

Configuration

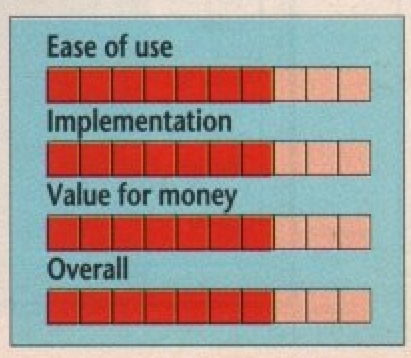
An important feature of Mix and Match with Maggie is the ease with which it can be configured by an adult to suit tiny students of differing abilities.

There are eight different options which can be saved.

These are:

Sound on/off	Determines whether the various sound effects used throughout the games are to be played.
Scan speeds (1-10)	Sets how quickly the hand scans the available items as detailed below
Seconds per move	Choose from 0.5 to four seconds with half a second between each choice.
No of questions (1-10)	Determines how many questions are asked during each game.
No of Boxes (2-4)	Lets you set how many boxes containing alternative answers appear at the bottom of the screen.
Time Display (1-10)	Determines how long (in seconds) the target item remains on screen in Forget-me-not.
No of attempts (1-10)	Sets how many incorrect attempts the user has before a hint is given by Maggie.
Record use on/off	Determines whether students' results should be recorded or not.
Hide this section	Determines whether or not the access instructions on the control screen are displayed.

Mix and Match with Maggie is a product of Scetlander Limited, 74 Victoria Crescent Road, Glasgow, G12 9JN
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3D modelling made easy

3D animation without the expense of ray tracing. Henri "mad dog" Bujko and sidekick Yuri explain how to create a wibbly wobbly world of your own

What was once the Holy Grail in computer graphics is now a common feature in most 3D programs on the market.

Ray tracing produces realistic images through the accurate portrayal of lighting, materials and shadows, and at present a variety of packages exist on the Amiga which offer users a multitude of modelling functions and rendering possibilities.

Current raves are Real3D v1.3 and Imagine, both madly exploiting the Amiga, and producing results that would even make your Silicon Graphics-based Alias or Wavefront expert look twice. All very well you might say, but why bother with these incredibly expensive systems?

The difference is *speed*! All major top-end animation systems run on very powerful SPARC or Transputer-based hardware which can leave the Amiga standing.

As a basic machine – that is, just 68000-based – the Amiga can be highly productive and perform tasks such as wordprocessing and database handling very well. General graphics applications such as paint programs and 2D animation usually present no problem, but when the notion of rendering awe-inspiring epics such as checkered balls on mirrored landscapes becomes an obsession – watch out!

What you need to do this kind of thing is an accelerator card. It's a wonderful piece of silicon which allows you to render a complex scene in the time it takes to feed the cat and make a cup of tea. We are talking 68030-based cards with a maths co-processor as standard and at least 4 megs of 32-bit ram. So let's look at what's available.

In the left corner we have Draw 4D, new from the States, and in the right corner, Videoscape3D, ProMotion and Modeler3D – a set of software that gives you modelling, animation, and rendering all in the time it takes to say "The Unbearable Lightness of Being".

The first decent 3D animation software to grace the Amiga was Videoscape 3D. What this program offered seemed exciting and highly desirable and anyone with more than a passing interest in the world of 3D wanted it.

Version 1 of V3D was unusual to say the least. There was no sign of any halfway decent object editor – as a matter of fact, most if not all of the object building was achieved outside the main program in separate CLI-based programs called OCT and EGG.

All your objects had to be worked out on graph paper and meticulously realised in all dimensions for the thing to work. Very, very hit and miss and unreliable. Since then it has been extensively uprated and modified by the author, Allen Hastings, and released as version 2.0.

This is how the program remains now that Hastings is concentrating entirely on the production and development of Lightwave 3D. This latest effort is a far superior piece of software which is bundled with NewTek's VideoToaster and offers high quality rendering and an intuitive modelling and animation environment.

Draw 4D

Before the appearance of Draw 4D, you had little option but to use flat 2D titles and headings in programs such as Pro Page, Pagestream and Pro Draw. OK, you could produce titles using perspective and warp effects but they still didn't quite jump out of the page and smack you in the eye. Draw 4D allows you to reach out and grab your reader.

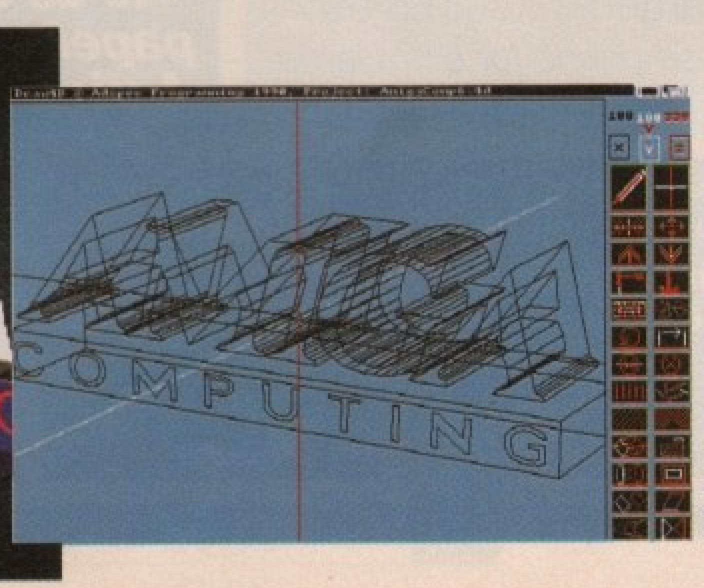
It's a full 3D design package, with tools and facilities very much like those offered by the stock 3D programs such as Sculpt Animate 4D. When you start it you're presented with your 3D universe slowly rotating in space. It's up to you to fill it with objects.

Draw 4D, in common with most other 3D modelling programs uses points or vertexes and vectors or edges to make up 3D objects. For example, a cube is simply eight points in 3D space connected by 12 edges.

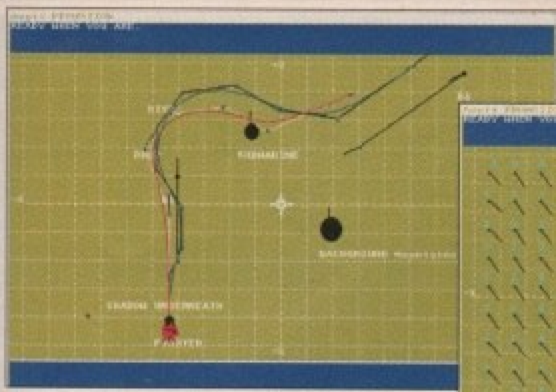
The most basic drawing tool that you will use in Draw 4D is the freehand tool. This allows you to draw a shape or polygon in any of the three dimensions, which are labelled x, y and z. You start with a single line of two points and then by adding points you create your shape or polygon. So, to create a square you would have to add two points to your straight line.

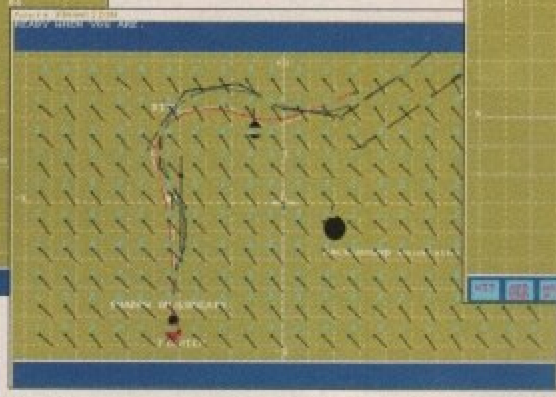
Once you have your simple object





Draw 4D turns wireframe into finished image in seconds. Why ray trace when it can be so easy?









Graphical representation of all the necessary numerics for the creation of a full-blown animation in Videoscape

you can use Draw 4D's tools to manipulate it. There are eight main effects that you can use on your objects. These are – rotate, extrude, sweep, scale, clone, slant, stretch and mirror.

The extrude tool lets you pull a 2D shape through space to produce a 3D object – an extruded circle produces a cylinder.

Extrusion can be used to give a 3D effect to any object. A 2D headline looks much more interesting when extruded and viewed from a different angle.

The sweep tool lets you sweep an object around one of the three axes, so if you sweep half a circle around an axis you produce a sphere. It's useful for creating any object with a circular cross section.

The rest of the tools/effects are pretty obvious from their names. They can be combined to produce many other effects – with a little imagination, you should be able to create any object.

The user interface in the object modeller is very simple to use once you have grasped the basics. It allows you to view your work from any angle by rotating the three axes in a way very similar to the perspective editor in DPaint. However, you can only view your object from one direction at a time.

A tri-view editor, where you can view the object from all three axes onscreen at once might have been useful. Many other 3D programs use such displays to great effect. However, for the uninitiated, the single-view editor is less cluttered and can make Draw 4D a far less daunting program to use.

Choosing fonts

Draw 4D is supplied with two fonts – Times and Block. Times needs no introduction, and Block is a sans serif font much like Helvetica. Each font is provided in two versions. The first version is for use as a 2D font and the second is for use when extruding.

If you extrude the 2D font any holes in the letters end up filled when you display them. These two fonts are roughly the same as supplied with Pro Draw. If you have used Pro Draw you will be well aware of the variety of things you can do with these typefaces.

If you want more fonts, Adspec – the producers of Draw 4D – have allowed for font editing so that you can modify the existing fonts. In fact, all you do is load the existing letter into Draw 4D, modify it and then save it again. This process, as with any typeface design, is time-consuming but for a particular look it's very useful.

Having selected or created your typestyle you enter the text into a requester and click on OK. The text is rendered according to the spacing and placing options entered, and thankfully it appears onscreen fairly quickly. It cannot be edited after this point, so use your dictionary before rendering it.

In common with all the 3D programs on the Amiga, the more objects in your universe the slower the program redraws. The fonts used are particularly complex objects, so unless you are using a supercharged Amiga you will probably find yourself limited. You should have plenty of room for the average headline or title.

> *'...render a complex scene in the time it takes to feed the cat...'*

Before you import your work into a DTP application you need to render it. You start the process by positioning the editor's view of the object, then set the rendering options for the type of screen you want to produce.

The options are HAM, interlace, hi-res and overscan. The rendering screen displays the picture in full colour or grey-scale depending on the palette selected.

After the picture has been rendered for the first time access is possible to a further set of options for lighting. This requester is quite complex, but basically it allows you to set the brightness and position of the two available light sources.

It might sound like Draw 4D ray traces, but it does not. The lighting positions and brightnesses are just used to calculate the colour of each surface – no shadows or reflections appear.

At this point you can also load a background. The results produced are similar to those achieved using Videoscape3D solid modelling mode as each surface is totally one colour. Dithering can be used but is rather crude and applies to the whole of each surface.

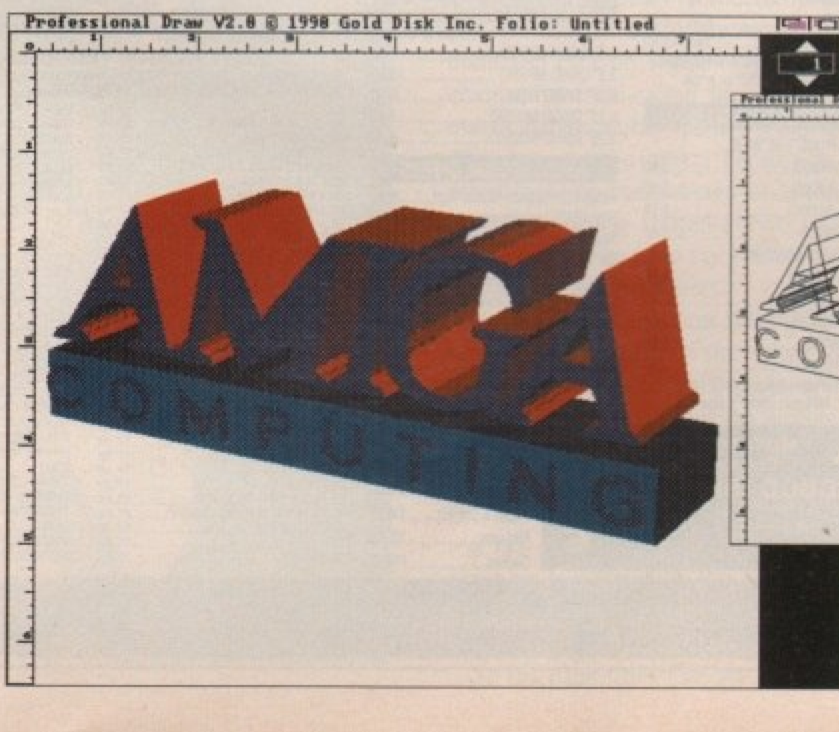
When the image is ready it can be saved as either an IFF piccy or a Pro Draw clip. The IFF save capability is not terribly useful as the results produced are not on a par with other 3D programs which use anti-aliasing and better dithering techniques.

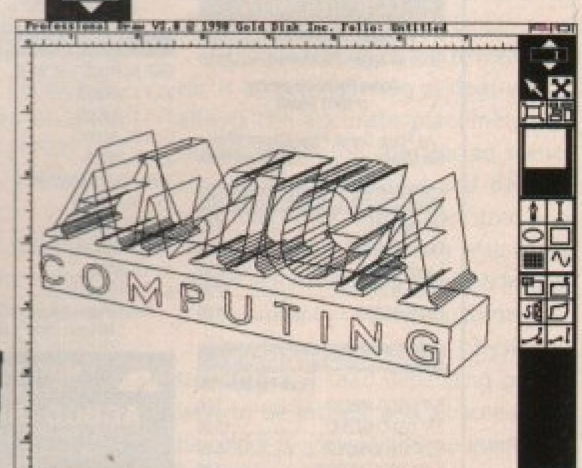
Saving strength

Draw 4D's strength is in its ability to save your structured 3D object in a form that most DTP programs can read – it saves in Pro Draw clip format. Once in your DTP program it can be resized in any way and it will remain totally crisp.

When saving a Pro Draw clip you can specify colour, black and white, and outlined. I found in several cases that clips I stored did not load properly. Pro Draw seemed to get the layers wrong for some of them, but this was easily remedied.

Draw 4D also has the ability to animate, but I for one am bewildered as to why this feature is included. In my opinion it would have been far more





Pro Draw's view of the virtual world – simple, speedy, pretty and painless. What more could you want?

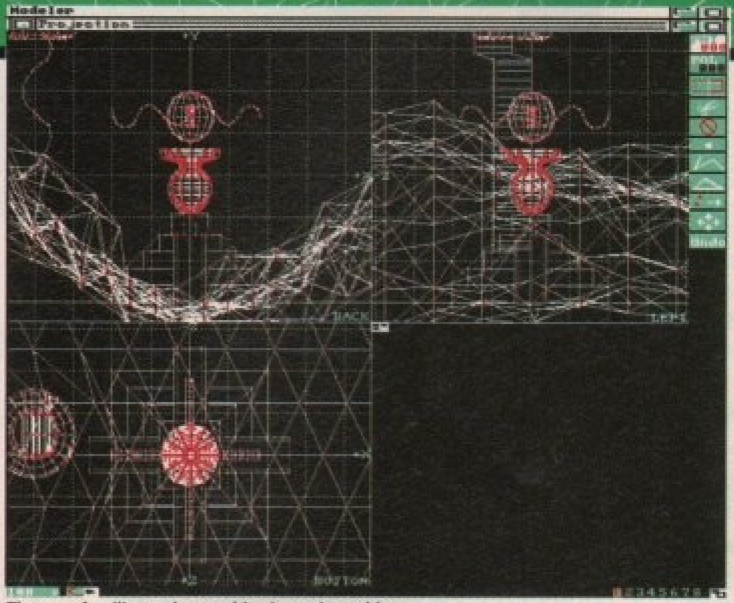
productive for the programmers to have concentrated on the DTP aspect. The competition in the animation arena is far ahead of Draw 4D, and I can't see the likes of Sculpt Animate 4D or Real 3D being challenged. As for the competition in the 3D structured drawing market – there is none!

The animation facilities are fairly elementary. Each object onscreen is attached to a path through which it will move in the course of the animation. The objects can rotate on the way.

Objects may be placed into hierarchies so that you can animate quite complex combinations of objects, such as the human body. The example animations produced by Adspec are, to say the least, a tad un-awe-inspiring, although they might act as a guideline for a DPaint animation.

Draw 4D is an interesting program, the like of which the Amiga has not seen before. Its strengths are its easy to use 3D modelling environment, its ability to output 3D graphics in Pro Draw clip format and its simple rendering formats. However, there are certain areas which seem pointless in the arena that I think it is aimed at. If you want to produce 3D titles for DTP, there is simply no competition, but there won't be many of you out there...





The now familiar orthographic view adopted by many packages, and Modeler is no exception

ProMotion bundle

If you are at all interested in buying Videoscape 3D, you will find that it comes bundled with another interesting package called ProMotion.

This software was devised specifically to be used as a staging environment for Videoscape. Many people felt that the process of producing animation settings files for Videoscape was tedious and complex and wanted an easier way of inputting the information that Videoscape required. ProMotion was supposedly designed to address these needs.

So, let's deal with ProMotion first. It's an unusual program indeed, taking up the best part of 600K of precious memory and a pig to get working properly onto the hard disk.

The code and internal workings on the face of it seem to be complex and all the menus operate in hi-res interlace – make sure you have a 1meg Fatter Agnus installed. But let's get to the point.

What we have here is software which uses a graphical interface in order to plot the movement and positions of objects, lights and cameras. There's no modelling here, just pure staging of action, hence the tedious use of film directors' jargon in the way the program describes operations.

Once you have read the manual a few hundred times and also attempted the tutorials, you may feel ready to produce your own staged mini-epics.

OK, so what can you do to achieve this? Well, supposedly ProMotion gives you the ease of using the mouse to point and click on a graphical editing environment. So-called simple commands define motion paths for up to 25 objects plus the camera. Because the scene that you see is based on a top plan view of the staged action you should be able to keep track of all the elements in your animation.

Perhaps one of the most striking features of this program is the ability to assign effects such as wind, gravity and magnetism to one or all of the objects. All the effects can be defined in a variety of ways to take into account the strength and randomness of phenomena like magnetism. It is possible to combine the effects but it is unpredictable to estimate the outcome – very much as in real life.

All the parameters that are available within the Videoscape 3D program have in ProMotion their equivalent represented by menu commands with point-and-click ease. For instance, light sources and their intensity, and focal length of camera lens can all be set and modified without typing in sequences of numbers.

Path generation within object motion can be visualised within the graphic screen. Also, the camera, objects and lights can be moved and placed around the screen.

When you are happy with the settings the program will save everything in a special format not dissimilar to Videoscape's own file structure. This can then be loaded into V3D and all the rendering will be handled by the program.

I could go on, but this is a program that's supposed to make Videoscape 3D easier to handle – and for me it doesn't.



The finished masterpiece in all its glory

Modeler3D

What in all honesty should have been bundled with Videoscape3D is Aegis's Modeler3D. This fine software takes all the drudgery out of graph paper and presents you with a de facto standard tri-view screen, ready and waiting with a definable grid.

Modeler gives you a few primitives to be getting on with such as cube, sphere and tube – certainly not as many as equivalent modelling programs offer. But there are extensive tools such as spin, extrude and lathe which increase the variety of shapes which can be produced.

Useful features such as shearing, twisting and re-mapping of points help the user to define more organic-looking objects, but the ability to have spheres with perfectly defined apertures can present an almost impossible task to the software. Again, look to the new generation of 3D packages such as Real3D and Imagine to achieve the impossible.

All objects are composed of polygons but are not limited to triangles. For instance, it is possible to make multi-sided polygons that take less rendering time than if they were constructed with just triangular faces.

A unique feature of the tri-view editor is a multi-layering system which allows the accurate placements of shapes within the constructed scene. Objects can be copied and deleted from successive layers, and sized and moved without interfering with other shapes within the database. This feature is very similar to CAD-type software.

The tri-view can be physically stretched and sized depending on the view to be tackled, and all scenes can be colour previewed, the representation being an outlined, unshaded picture. This screen can be sized and placed within the main tri-view to look at the whole effect. A mouse point-and-click feature makes viewing the scene at dif-



Videoscape's view of Modelers creation

ferent angles a doddle. As with ProMotion, contained within Modeler is the ability to define motion and camera paths. You simply draw the paths on the tri-view and assign tweens and number of frames to them. It's certainly simpler than ProMotion but not in the long run as intuitive.

Perhaps one of the problems with Videoscape is its limited colour defining abilities. The program gives you a set palette to work with and allows some surface attributes, such as matte, glossy and transparent to be used. But these are limited textures and can't truly be combined.

Modeler makes the same concession to this palette using point-and-click mouse operations.

In conclusion, Modeler3D is a good program of its kind and complements Videoscape3D well, more so than ProMotion I feel. But editing environments such as Sculpts are better implemented and far less buggy. Modeler has not seen any kind of upgrade from version.1. and really needs some overhauling in certain areas.

Videoscape3D

Videoscape3D has been around for quite some time, even in its 2.0 version. It was probably because Allen Hastings decided to leave development of V3D that ProMotion and Modeler3D came into prominence.

Taking Videoscape on its own virtues, what do we have as a program? The main screen consists of a fairly hi-tech looking point-and-click panel. Here you can load your objects that have either been created using the supplied CLI-based EGG and OCT programs or from Modeler3D. As the objects are loaded into Videoscape a counter displays the total number of points and polygons.

Bear in mind that all the models and rendered pictures you see in this article (excepting the Draw4D images) were produced on an Amiga500 with a A590 hard drive and in total 3 megs of ram. The point limits on this type of system are around 21,500.

After each object is loaded the program requests an associated motion file, if you have not prepared one the object is automatically placed at its point of origin. There is also a choice to metamorph the last two objects loaded into the scene. It's a pity that more than two objects can't be morphed, as it's quite a nice feature. The panel below allows you to load camera motions and alter the nature of the lens used, such as normal, wide angle or telephoto.

The motion and camera files are very simple Ascii formats and consist of a special header and a collection of X,Y,Z and heading, pitch and bank co-ordinates, which you have to type in yourself.

> *Once you have read the manual a few hundred times you may feel ready...*

A variety of screen resolutions and rendering modes are possible including Extra HalfBrite and HAM. The quickest results are achieved with the non-HAM modes. Typically, the featured pictures took three minutes to render on the aforementioned setup and HAM images 35 minutes, the main reason being the necessity to use the Z-Buffer option. I find that if you do not use this option the images do not look right, due to polygons being rendered in the wrong order.

The Z-buffer effectively draws the polygons within the scene correctly in relation to viewing distance. It's a memory-intensive feature and slows rendering down considerably, but nevertheless is essential.

Other options are defining sky and ground colours to use in your scenes. Unfortunately, there is no grading, just flat colouring. More interesting to the user is the ability to assign IFF images to the background and foreground of your renderings. In the example HAM pictures a marble backdrop has been placed behind the render.

Note that background or foreground images do not react with the surfaces defined in your overall scene, except for translucent objects, which do exhibit show-through characteristics – see the blue ball in the picture. It's also possible to have a sequence of numbered IFF images loaded automatically into the rendering of your animation files or frames.

For example, if you wanted to have 20 images of consecutive movement automatically loaded behind a 20-frame animation sequence which you were rendering – leave the program to do the job.

And when you have finished loading in the objects, motion files, camera info and set up the required resolution, lights, etc all this information can be saved as a settings file in a directory called, you guessed it, Set!

This can be edited quite easily afterwards, since it's only a simple text file. You can either save your scene in anim format or single IFFs for loading into other programs.

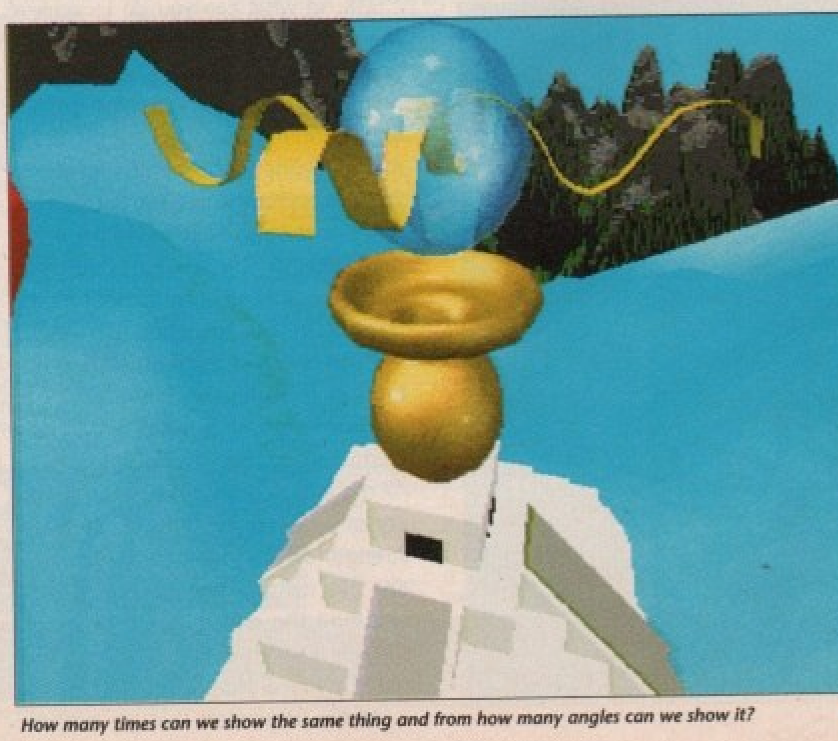
Conclusion

In summary what we have in Videoscape3D is a program that in today's well-stocked 3D land seems slightly outmoded, and a quality of rendering that is fairly fast but needs working on to get the best results.

But with some effort in understanding the numbers and co-ordinates you get a program that can produce efficiently and quickly some of the most complex hierarchical animation you are ever to likely see or do. If you don't believe me, ask to see the Bass Robot animation.

I've dwelled less on Videoscape than ProMotion or Modeler3D because you really need either one of those two in order to maximise results.

Having said that, I reserve judgement on ProMotion until some more time is spent using it. But a combination of Modeler and Videoscape makes a fine package.



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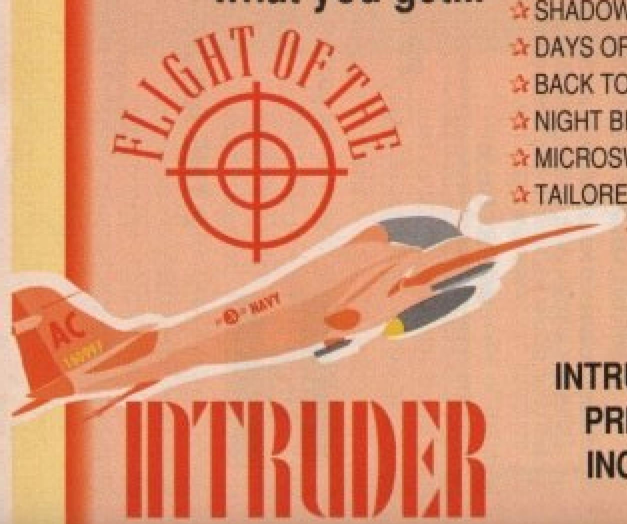
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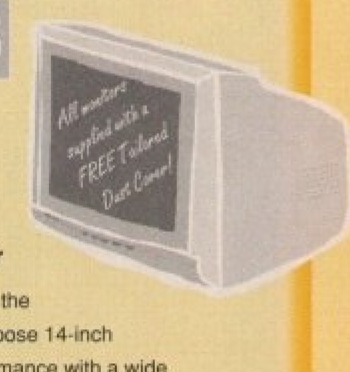
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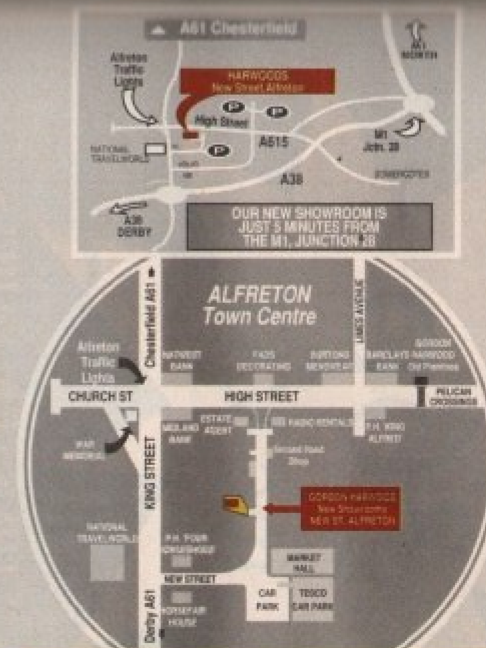
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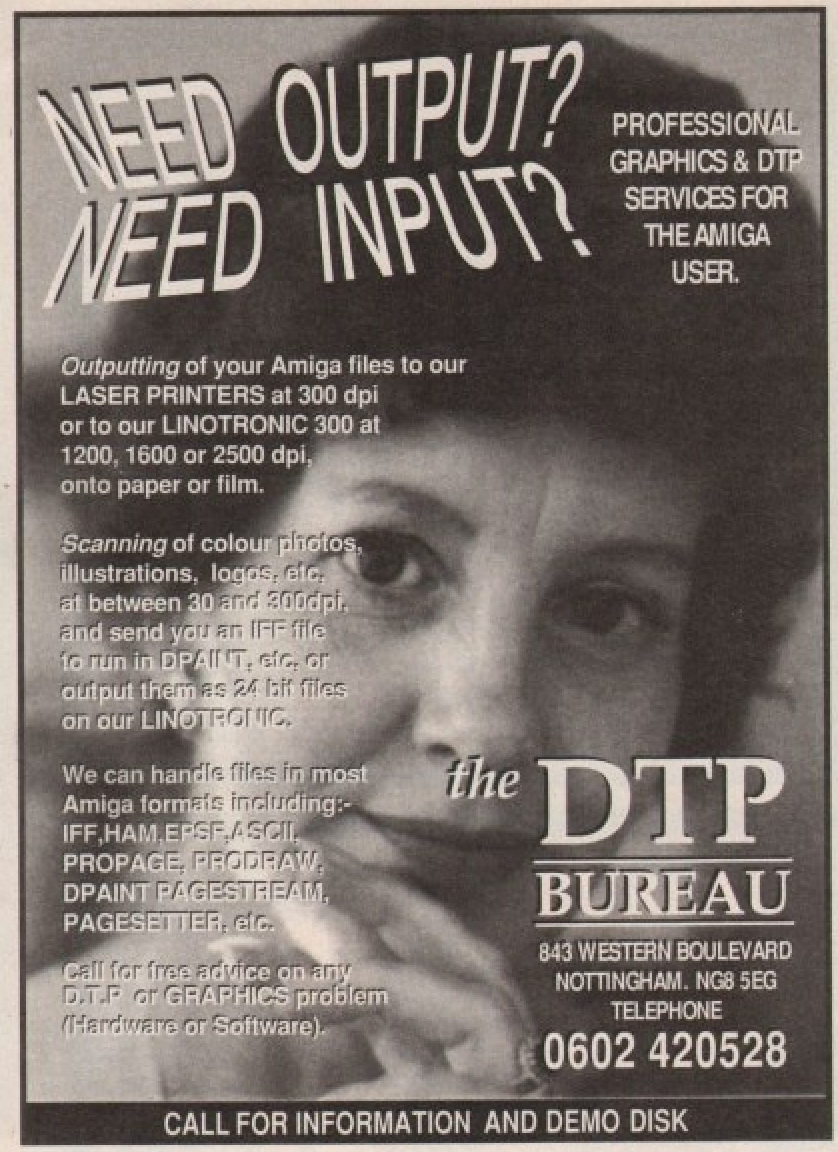


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CLI BEGINNERS GUIDE



Going to press

Stevie Kennedy takes the misery and mystery out of printers in AmigaDOS

The printer is a beast. No, don't spring to its defence, most average computer users arrive at the same conclusion shortly after opening the box and plugging it in. From the moment you boot up, the recalcitrant monster seems to snarl menacingly, and will beep sullenly at the slightest provocation.

With the help of Workbench and a few AmigaDOS tricks, however, the printer can be made a great deal friendlier and easier to handle.

To make your dealings with the 9-pin nihilist a bit more constructive, therefore, we'll concentrate this month on those parts of AmigaDOS which pertain most to printing.

Setting it straight

The first step for any printer user is to come to grips with the printer section of Workbench's preferences program. To open this, double click on the Preferences drawer, then on the Printer icon inside.

This will bring up the main printer screen shown in Figure I. It is here that the user selects the correct printer port, printer driver, paper type, lines per inch, and sets the print margins. Many wordprocessors utilise the preferences settings, and if you wish to send a text file to the printer from CLI your output will be governed by them, so their importance cannot be overstated. To change the selected printer driver, go to the top right-hand corner of the display where you will find a scrolling list of drivers. Click on the up and down arrows, wait until the correct printer driver is highlighted in the middle strip then click on the OK gadget.

You have now selected your printer driver. The display will change to the main preferences screen, where you click on Save to record permanently any changes made. Your preferences are written to disk as the "system-configuration" file in the DEVS: directory of the disk you booted from, so they needn't be changed again once saved.

If you are using a colour printer or wish to put graphics on paper, you'll find a number of indispensable options available through the Graphic1 and Graphic2 screens, both of which are available from the main printer screen.

Graphic1 contains, among others, the all-important threshold and shading controls, while Graphic2 regulates dithering and print density. The only practical advice anyone can give concerning these settings is to experiment as much as possible.

Buy some fanfold continuous stationery and draw or import a DPaint image on which to practise. The best type of image is either one which has a wide variety of different contrasts and shading (for monochrome printing), or which makes use of dithering (important for colour printing).

Experiment mainly with threshold and density settings, and the different types of dithering. This is the only way to arrive at a practical understanding of how Workbench settings can affect how your printer performs, and has the added advantage that you will probably end up with a set of preferences which match your printer and graphics requirements exactly.



Figure I: The main printer screen

Routefinder

One of the most useful concepts to grasp before going any further is that of redirection, the technique whereby AmigaDOS can be told to send output from a process to any legitimate device or file.

When an Amiga program has output of any kind to be passed to the outside world, it does it through a "device". Under AmigaDOS, a device can be just about anything you want it to be, so it is possible to send output to a great many destinations.

Examples of devices are any floppy or hard drives, anything set up using an Assign statement, the monitor screen itself, and the many devices for which handlers and mountlist entries exist, such as AUX: and SPEAK:. Most CLI or Workbench programs will have a default output device, and most of ➤

CLI BEGINNERS GUIDE

these will be the screen or, to be more precise, the current CLI window.

In the case of the printer, the devices most likely to be used are the PAR:, SER:, and PRT: devices and for more advanced purposes the PIPE: device. Alternatively, output can be redirected to a file, and if the named file does not exist it will in many cases be created.

The redirection symbol is an angled bracket, which can be used in either direction, so two examples of AmigaDOS redirection might be:

```
ECHO >filename "This is redirection"
```

and

```
TYPE >PRT: filename
```

The first will create a file called "filename" containing the text in the quotes, and the second will send the contents of the file to the PRT: or printer device.

The PRT: device

The PRT: device uses the current preferences settings for printer driver, paper type and so on, so if you want text output with any sort of control over how it will look and what paper size it will print on, use the PRT: device.

The PAR: and SER: devices are crude gateways to the parallel and serial ports respectively, and act as sort of "binary bins" in that anything you send to them goes direct and unaltered. When a printer is attached to the port concerned, it will print out the text as it receives it, so most people will want to use the PRT: device instead.

If, however, you were transmitting data to another source through the serial port, as when using a modem, you could use redirection to this port controlling the transfer through the serial settings in preferences. All prefs settings concerning baud rate, error checking, and protocols are followed when using the SER: device.

When sending output to the printer, the three most useful AmigaDOS commands are Type, Copy and Echo, and

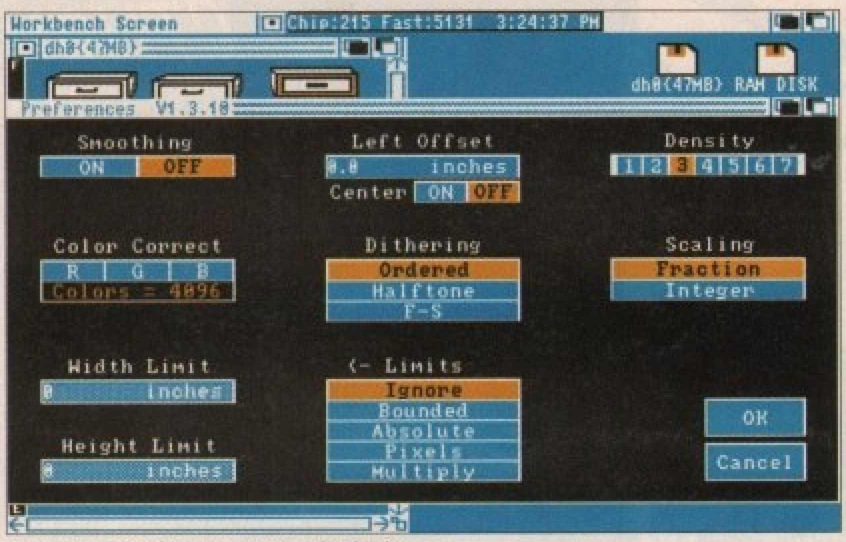


Figure II: Use Graphic2 screen to set print density

Type is probably the one you'll want to use most. This command normally sends its output to the screen, which is the default device, but it can be sent anywhere the user wishes.

Use the Type command with the syntax:

```
TYPE FROM filename TO PRT:
```

or

```
TYPE >PRT: filename
```

Either way, the text file will be sent to the printer device under the control of preference's printer settings and you should get some decent output.

For example, if you have a file on disk called "readme.doc" which is a few thousand words long and you'd rather not read it onscreen, you can print a rough copy using the command:

```
TYPE >PRT: readme.doc
```

If you later decide you want a NLQ copy on US Legal size paper with margins of 0.5in on all sides, you need only affect the requisite changes in Preferences and type in the same command. If you used the PAR: device for redirection, on the other hand, you would have no control over such factors, but then you wouldn't have to mess about with preference settings.

> *With a few tricks, the printer can be a lot easier to handle*

It follows that those who want to send letters to their printer will use the PRT: device, and those just outputting program listings will use the PAR: or SER: devices.

Echo and Copy are useful in other ways, but generally speaking will be used less than Type. You can use Echo with redirection from within a script file if you'd like at some point to send messages via the printer rather than the screen or would like to keep a running check on something, for example, a program variable.

Copy, on the other hand, is really only of use if you want to dump a file to paper rapidly.



Figure III: Graphic1 preferences

Pipe dreams

The PIPE: device is a little appreciated feature of AmigaDOS, mainly because it's designed to be used by programmers and users of the most advanced AmigaDOS functions. With a little thought, however, it's one of those things you can have fun playing useful tricks with.

If you use a text editor to produce simple documents such as letters and can't see the need to splash out on a decent wordprocessor, you might occasionally bemoan some of the features found on the more expensive packages.

One of the most useful gimmicks is background printing, and it serves nicely to illustrate the uses to which some of Workbench's more esoteric functions can be put.

Open your text editor (ED or MEMACS would both be fine) and type in the following script file:

```
LAB start
TYPE >PRT: PIPE:FILE
SKIP start BACK
```

then save it to disk as "background" or some other suitable name.

The listing does two things. First it types a file, named "FILE" and located in the PIPE: device, to the PRT: device, then it SKIPs back to the start and attempts to do the same thing again. The script will loop continuously until you re-boot the Amiga, so it is more of a sample listing than an example of good programming!

Once the file has been output to printer, the listing will wait for it to be topped up again before continuing, and if the file was empty in the first place it waits until the user sticks something into it.

A cunning ploy

To fool your text editor into carrying out background printing, type:

```
MOUNT PIPE: <RETURN>
```

If the device has not already been mounted, then run the script itself in the background by typing:

```
RUN EXECUTE background <RETURN>
```

Now all you have to do, when you want to print a file is to save it as PIPE:file rather than print it directly from the text editor. You will notice that the Amiga takes no time at all to accomplish the task as the file is actually being written to memory.

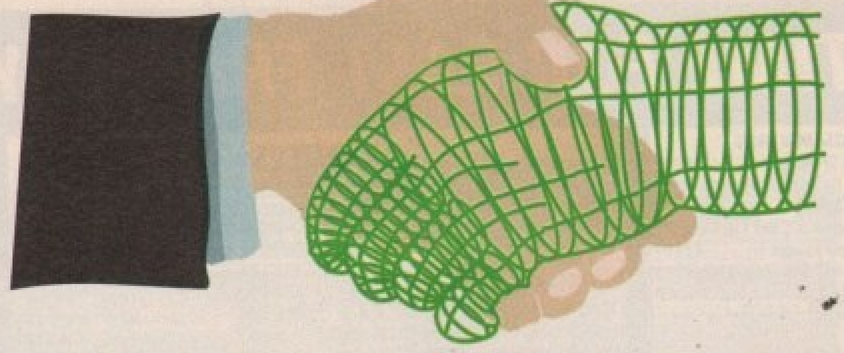
The PIPE: device, written by Matt Dillon, is a channel through which two AmigaDOS processes can communicate with each other, and consists in essence of a 4K ram buffer.

This channel is four times as large as the standard buffer on a cheap 9-pin printer, and is easily large enough to hold the text of an entire letter before passing it on.

Once a file is written to the PIPE: another process can come along at any time and access it, so if a process such as our "background" script is continually attempting to access the PIPE:, anything sent to it will be used instantly, thus freeing up your text editor for the next document.

That's all folks!

Until we receive enough letters asking for a specific tutorial, there'll be no more CLI columns.



Nodding dogs and furry dice

Add some whistles and bells to your designer disks. Paul Austin pulls out all stops to show you how

It's about time we explored the silly side of the Workstation and if you fancy some useless additions that do nothing more than raise a smile or impress a friend, read on...

Jaw dropping is a serious business and perhaps the simplest way to do it is by adding a few extras to your startup sequence. All the proud owners of last month's issue of *Amiga Computing* will already be at home with auto-booting disks created thanks to the Workstation. As a result, this month I'll be concentrating on the nodding dogs and furry dice side of disk construction.

To add a little glamour to the basic disk design we can use the Workstation to add graphics, sound and even a stylish backdrop to the loading sequence and the final Workbench screen.

The first job is to pick your sound sample plus a suitable image for the opening screen. It's totally up to you as to what type of sample you choose but remember, big samples use up lots of space, so be careful.

The same applies to the graphics, if you use a Ham picture with overscan and interlace be ready for prolonged loading times and a considerably slimmed down amount of disk space.

Searching for sounds

If you're not the musical type, finding samples may seem to be something of a problem. In fact, they're everywhere and you can use SID to search them out.

The coverdisk is a great starting point but almost all PD disks and most commercial offerings have samples hidden away somewhere. To find them click on the DESC button which you'll find hidden below SID's main control panel.

Once the DESC option is activated all the files listed in any directory or disk will become instantly recognisable and picking out samples will be a breeze. When you've found the sound you want simply copy it to the c directory of your auto-booting disk.

Taking pictures

There are two ways of adding an image to your disk. If you're an artistic soul you could create your own loading screen via the paint package of your choice – whether that be HAM or IFF the choice is yours. The alternative is to lift an image from elsewhere and that's when ScreenX, the Workstation's very own graphic ripper comes into its own.

If you plump for the ScreenX option the image you're planning to grab has to use a non-custom screen. In other words, it must multi-task. One of the best ways to check for multi-tasking is to hold down the Amiga key and press N and M in turn. If the various screens alternate then there's a good chance ScreenX will capture what you're after.

You'll find a guide to ScreenX in your Workstation manual so grabbing your favourite image should be simple. The only thing to watch is that you capture the correct screen. When you have the image you require it can be saved direct to the C directory on your auto-booting disk.

Now we have both the image and the sample in the C directory of your auto-booting disk it's time to alter the startup sequence. To do this, exit ScreenX and open or expand SID. Now double click on the S directory of your designer disk and highlight the startup sequence.

OK, now click on Edit and after a brief pause QED should appear displaying the selected startup sequence. Now simply add the following lines at the top of the sequence:

```
Background
sound "filename"
PPshow "filename"
```

The "filename" is simply the name of the graphic or sound you've chosen. Remember not to add the quotes and leave a space between the program and the filename.

In this particular example the sample loads and plays before the graphic but this is purely a matter of choice, either way round will be fine. After you've decided the order simply save and quit.



As you can see there are a few extra names that haven't been mentioned. Sound, Background and PPshow are three utilities which are employed within the Workstation but there's no reason why you can't use them as part of your own disks.

Both sound and PPshow are to be found in the C directory of the Workstation so simply copy them into the C directory of your new disk. Background must be copied into the designer disk's C directory also, but in the case of the Workstation it's hiding in the Menu-2 directory so you'll have to double click and copy from there. When this final task is complete it's time to reboot and marvel at your latest creation.

Well, once again that's all that space allows, so until next month, happy tinkering and remember – if anything goes wrong, read the manual...

WorkStation Update

Due to a hitch when the WorkStation disk was in final production the DATE command in the disk's C: directory was mangled. This has meant that many users have had a puzzling "Error 103: Out Of Memory" message during boot-up and have subsequently been unable to set their machine's internal clock.

Unfortunately, the problem was not detected until many readers had received their WorkStation disks, so in order that we might remove the problem as painlessly as possible, we have included a script file on this month's disk which will carry out the required alterations to the WorkStation disk.

STEP 1: Make sure you are using a copy of the WorkStation disk, **not** the original.

STEP 2: Turn on your Amiga and insert the August 1991 coverdisk.

STEP 3: Wait until the coverdisk finishes loading, then click once in the CLI window left open at the bottom of the disk's Workbench screen. This will activate the window ready for your input.

STEP 4: Type the following:

```
CD SYS:UTILITIES <RETURN>
EXECUTE WSUpdate <RETURN>
```

STEP 5: Follow the onscreen prompts until the message "Bug Fixed" is displayed, then re-boot with the WorkStation disk. All should now be as the WorkStation compiler intended.

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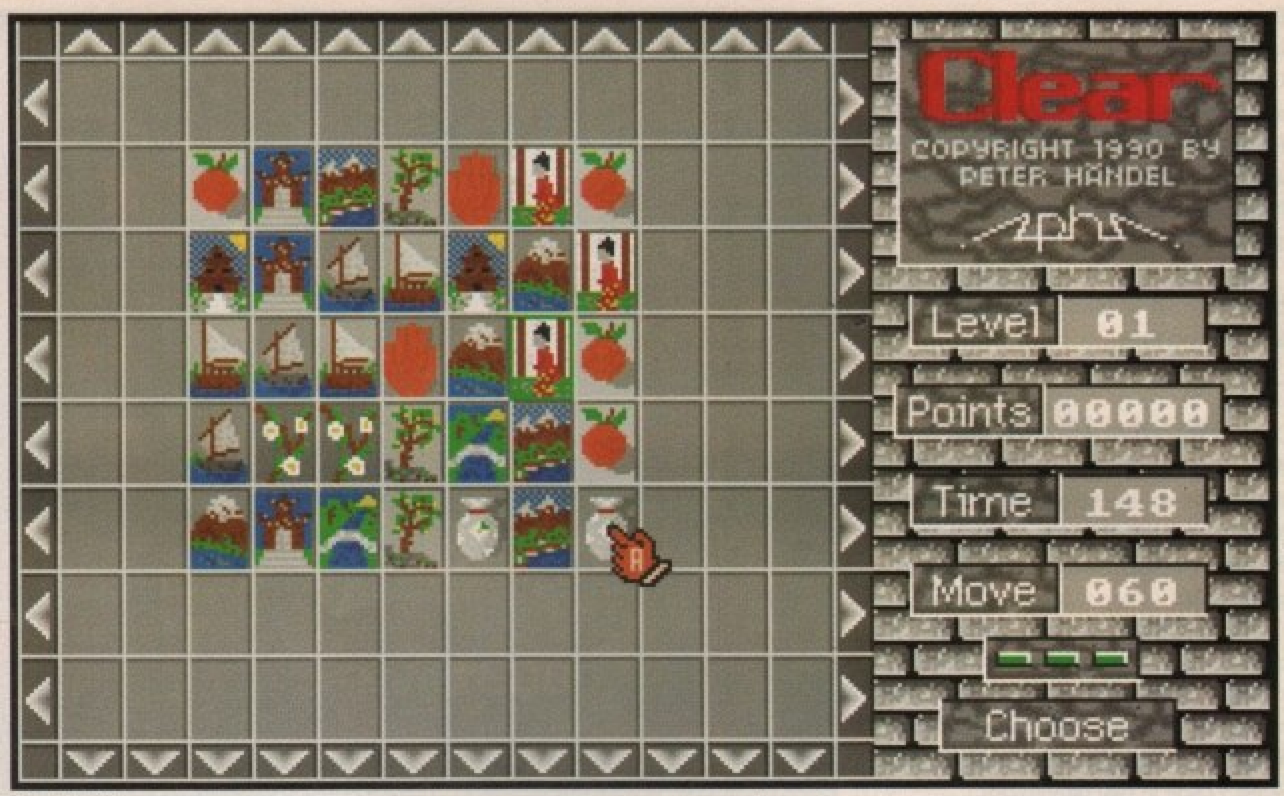
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PUBLIC DOMAIN

PD pundit Pete Bullock digs through the demos

We kick off this month with a selection of rather splendid games. If you find puzzle games appealing then AmigaNuts disk #1077 could be just the right prescription for an otherwise uneventful day with your Amiga.



Tile game fun

Clear

Clear is a tile game which is quite fun to play and more compelling the longer you stay with it. The idea is to rid the table of matching symbols by bringing them together in a horizontal or vertical row and then clicking on the first and last of the bunch to remove them from the board.

To manoeuvre them you move a line horizontally or vertically, one tile space at a time, by selecting the gadgets which are placed around the screen.

There are hazards to avoid, such as keeping the tiled hands away from each other – if the hands come together you will find that the rows the hands are on can't be moved and you're stuck.

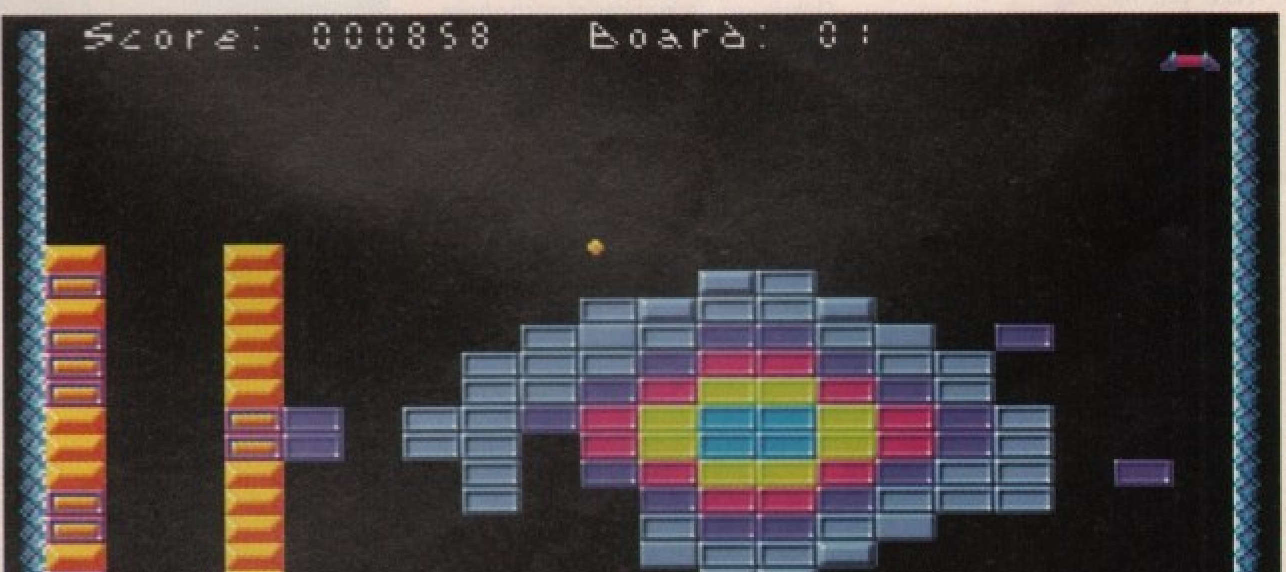
It's an enjoyable and addictive game which has been converted from the popular arcade version. The graphics are quite pleasant but the sound is practically non-existent. Overall, it's one worth having.

Megaball

There are games whose appeal lasts for years and years and always seem to pop up at some stage in a computer's development.

Breakout is one of these. Invented some nine or 10 years ago, it now appears on Goldstar's disk #G43 and has been renamed **Megaball.**

There always seems to be someone willing to code versions of this popular game for the PD scene and there are a number of versions available on other disks, but Megaball is worth a look. There's no point in explaining this game because everybody knows what



Goldstar breakout with more classic PD

Breakout or its clones such as Arkanoid or Giganoid are like, except to say that the use of colour is excellent, and there are a number of pieces you can collect for extra options within the game, such as magnetising your bat and enlarging it to practically the same width as the screen. Marvellous!

The music and sound effects are also brilliant and it all makes for a splendidly entertaining time.

Rubik's revenge

Around 1982/3 a craze overtook the nation and almost no-one was immune! It was to sweep the oceans and worm its way into the minds of children and adults alike.

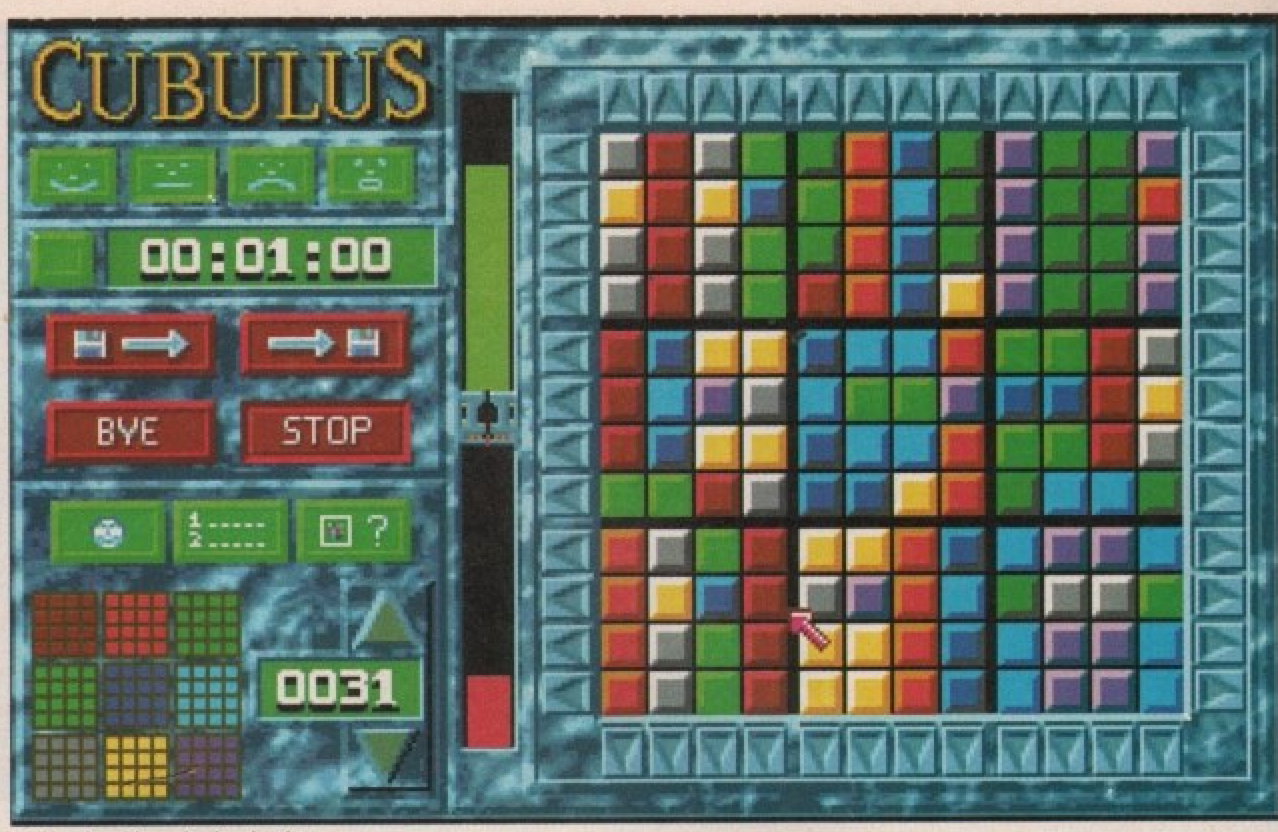
The fiendishly mind-boggling Rubik's cube, created by a Hungarian mathematician, is still with us. Now, you can re-live the experience with a game from Riverdene PD called **Cubulus**. It's a Rubik's cube in two dimensions.

You are presented with a board containing nine sets of 16 blocks in differing colours. The object of the game, as with the original cube, is to rearrange the colours and put them back in the correct order. The game is similar in style to Clear and is just as addictive.

The blocks are mixed up by the computer and then it's all up to you. The gameplay method is again similar to Clear – you move the blocks by means of arrows placed around the sides of the board. You can move left or right and up or down. It may take some time to do this but it feels great when it's finished!

It's tremendously entertaining stuff and well worth the dosh. I've seen games like this being sold for over £20 in the shops – why part with so much when you need spend so little?

The PD scene is coming up trumps with good quality entertainment that wouldn't be out of place in an arcade and costs a lot less than some commercial offerings.



Rubik's cube without the thumb ache

> *'It's tremendously entertaining stuff and well worth the dosh'*

Ye gods

If you're a fan of the Tetris-type games, I have two which may be right up your street – namely **Shapes** and **Zeus**. These are terrific puzzle games that grow on you the more you play them.

In **Shapes** you have to fill a space, a bit like a cross, with different shapes. Only a certain number of each shape are available and you have to use your skill and judgement to determine what shapes will fit where.

You choose a shape and an outline of it will appear where your mouse pointer would be. Using the mouse to position the shape you can tell if your chosen shape will fit the cross. It may take some time to figure out what final shapes you need and you'll be fighting the timer to finish before it counts to zero.

Addictive and compelling Shapes will keep you occupied for quite some time and is on Seventeen Bit Software disk #1046.

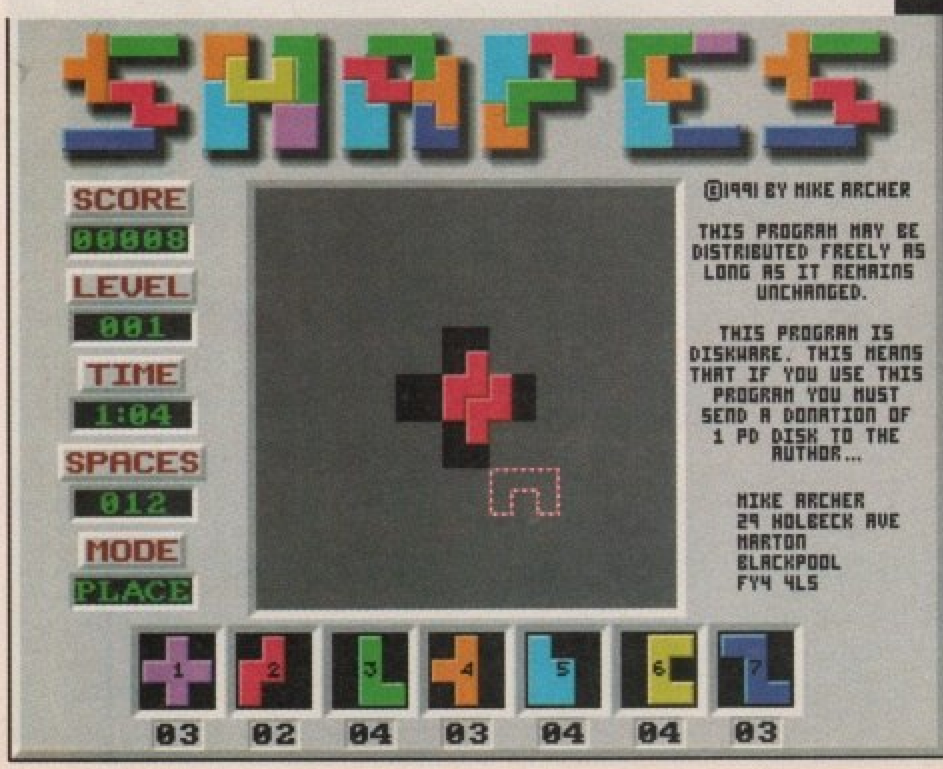
Zeus is another fine example of the quality you can expect from the current PD scene. The object here is to match up similar objects while moving others around. This is not as easy as it sounds as a number of features make this one of the most puzzling games I have seen for quite some time.

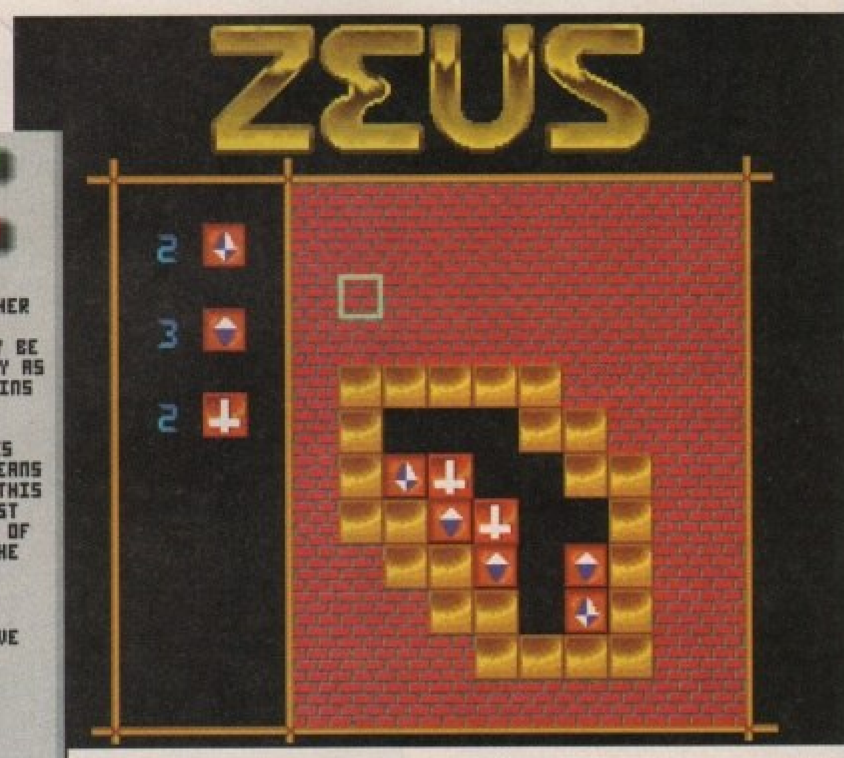
Individual matching objects must be placed side by side or on top of one another. The only problem is this may entail dropping them from a height on to another object which may or may not be the last of its type on this level.

Tremendously enjoyable and having a quality unseen in many commercial games. Zeus is available on Seventeen Bit Software disk #1058.

Boulderdash

If you ever owned a Commodore 64, the chances are you bought the game Boulderdash. If you didn't, you missed out on a very addictive game whose





Variations on the Tetris theme

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appeal lasted for months. The object was to collect a number of jewels hidden in various caves while avoiding boulders which were strewn about the place. You would lose a life if a boulder fell on you from a great height and it all added up to a very enjoyable experience.

Now AmigaNuts have released a clone of this written by Ian Cogings and I must say I enjoyed playing it. The graphics are cute and the gameplay is identical in style to the original.

Its name has changed this time though to **Amidash** and it's available on AmigaNuts Disk #1038. Enjoy it – I did!

Utilities

If you like mucking around with utility programs you may find AmigaNuts disk #848 a nice little addition to your collection.

On this disk there are two font designers, one for 8 x 8 fonts and the other for 16 x 16 size fonts. My only complaint here is that the grid containing the 16 x 16 edited characters is a little small. A magnify option here would have been nice. There are options to move, mirror, reverse, cut and paste parts of the font set and to save the font to disk.

Also on this disk is a program called **Powerboot** which allows you to create a menu for your disks and store it on the bootblock.

For those of you unfamiliar with bootblocks, it is track zero on your disk which can contain a 1K machine code program to do something as soon as the disk is read after being inserted. That's how all those fast loading schemes work on commercial games – pop in the disk, and the game begins to load in no time at all.

PowerMenu is a nice little utility similar in style to powerboot except that it's a bit more aesthetic. Again, you're allowed to create a menu, but this time you can design a screen format around it.

By creating a menu data file, and embedding within it special formatting characters – similar to macros on a word processor – you can change colours, execute script files, run programs and more, all at a click of the mouse.

The screen setup is attractive, with a few stars floating away in the background, and it makes the user interface a pleasure to use.

Brightening Topaz

I don't know about you but I find the standard system Topaz font rather boring. Wouldn't it be nice to change it once in a while and add a bit more appeal to your old Amiga? Well, now you can.

Simply use the NewTopaz command on AmigaNuts United disk #848. All you have do is type NEWTOPAZ <FontName> and there you have it. You could use this command with a font you've designed yourself with the font editor mentioned above. If you use the gadget editor supplied on the coverdisk a couple of months back, you could give your Amiga interface a whole new look. It makes a change from looking at the same old Amy screen time and time again.

Intuitive

Every so often a program emerges that is user friendly, pleasant to look at, easy to use, and an absolute godsend. **IntuiMenu** on AmigaNuts disk #1075 is just that type of program. IntuiMenu allows you to set up a menu and from within it execute programs, perform CLI operations, move to another page, and do basically anything your program it to do. I can see it being of most benefit to hard drive users, as hard drives allow much more data to be stored.

You could design your whole computing environment around IntuiMenu. You could run Deluxe Paint III or PageStream with a little setting up and a click of the mouse. But IntuiMenu scores best in its user interface – there are gadgets to perform text manipulation and command execution, and boy it's just so pretty to look at! IntuiMenu would rate highly on anyone's PD shopping list and I suggest you get hold of a copy now!

Print happy

If you have a printer, are lacking some serious utility software, and use it a lot, then AmigaNuts disk #1033 can come to the rescue.

Have you ever wanted to print out a text file with a different font and been bored with the fonts supplied with your own printer?

Well now Fontconvert allows you (providing your printer is capable of

RAY TRACING

If you've seen any sort of ray-traced pictures, either on disk from a PD library, or if you make your own, you'll know how good the Amiga is at creating some pretty impressive pictures.

Senlac Software are specialists in ray-traced pictures and animations, and have some quite impressive disks of the same. There's not much to be said about these except that they are very, very impressive and have taken hours to generate. Definitely worth a look.

Ray-traced pictures take an incredibly long time to render – these specially constructed pictures take hours and sometimes days to generate on mainframe computers let alone the Amiga, but the results are worth the wait.

It just takes time, unless of course you happen to be blessed with the ownership of an accelerator board. The chips on these boards allow for much quicker mathematical calculation and enhance the ray tracing experience by allowing pictures to be created in less time than normal on the Amiga.

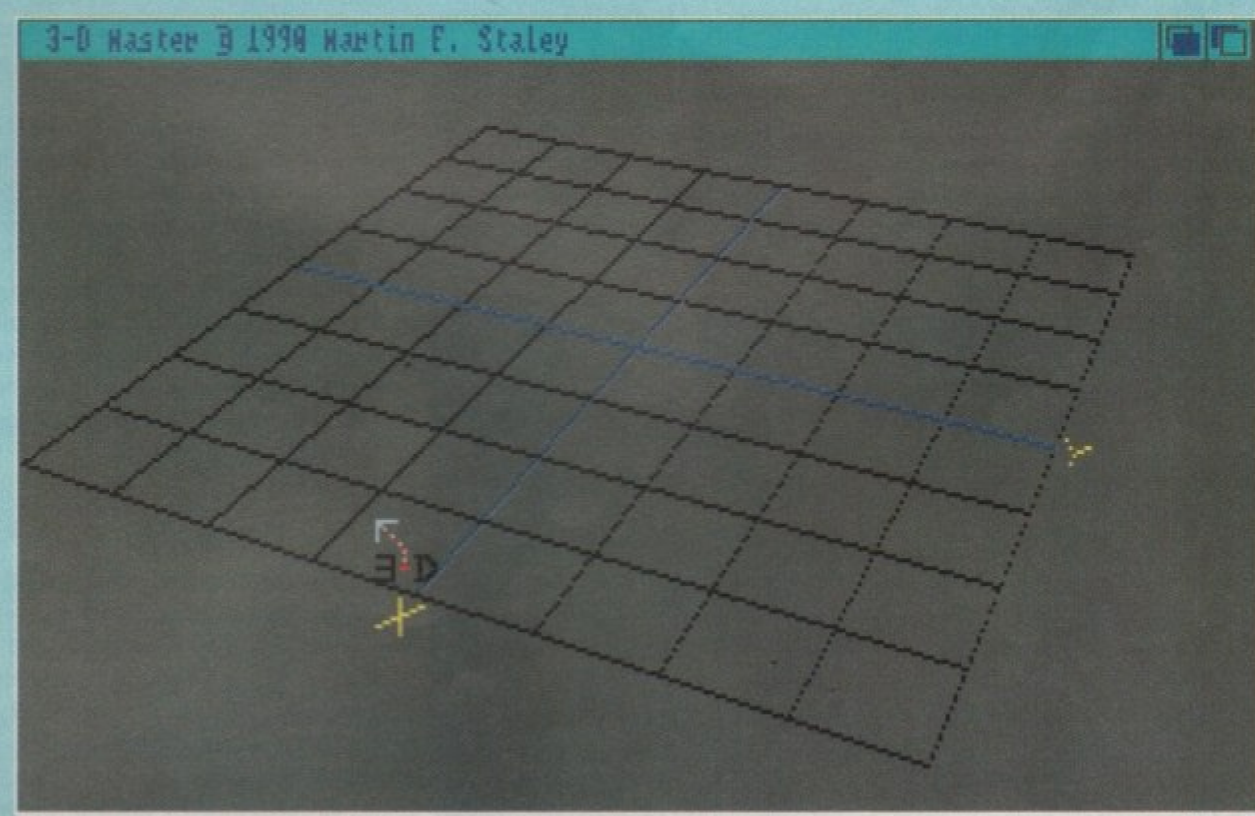
The only way to produce ray-traced pictures, was to invest in the very expensive Sculpt series of programs, which cost in the region of £300 to £400 depending upon the complexity of the program and its capabilities.

Well now you have the chance to produce your own piccies at a fraction of the cost, with Senlac Software's new release, 3D Master.

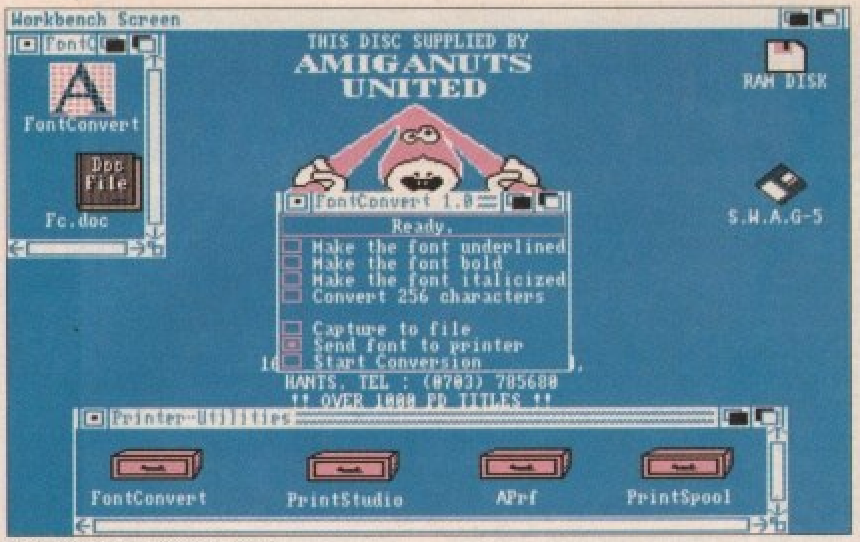
This is a budget ray-tracing package and is capable of some quite outstanding renderings. Most geometric shapes are catered for like spheres, cubes and cones. Dull shiny and mirror surface textures are featured, and the author has written some pretty fast rendering algorithms to make the tracing process speedier than with commercial sector programs. 3D Master is not actually PD, it is shareware, so the author has disabled some of the features in the public domain release. Should you be suitably impressed (and I think you will be), he would expect you to make a contribution and send him approximately £20 to get the fully working 3D Master package.

I am very impressed with 3D Master, having played around with it for a while. It offers the user a simple but interesting introduction into the world of ray tracing at a price that is quite unbelievable.

The author has been very charitable considering that this program could be sold for over £100. Indeed, one company hoped to market it at over the hundred pound mark but the author intended it to be released as a cheap alternative to the hugely expensive packages available elsewhere. You can contact Senlac Software on 0424 445498.



Ray tracing on the cheap



Make your fonts more functional

downloading character sets) to use any font you find attractive. It does this by reading in the font file and scaling and sending the characters along the serial or parallel port to the printer. Most popular printers support downloadable characters, so if you have a STAR or EPSON 9-pin, you're in for a bit of a treat.

As well as FontConvert there's PrintStudio. This is a nice little program which you can use for printing text files, DPaint IFF files or Commodore ILBM format files. A nice user interface is used, even if the colours are a bit sickly and you won't have to load up your other programs like DPaint to print out your file.

You can do screen dumps – this includes WorkBench screens – without a lot of fuss and you'll only have to set your printer preferences from within PrintStudio if you require a different setting.

If you're used to mainframes you'll know what spooling is, if not it means simply: I want to do this, but I don't want to wait until it's finished, I'd rather be doing something else! So you can send a job to the printer, like a text file, and be carrying on using your Amiga while it's printing.

The only problem here is that PrintSpool is implemented as a library of procedures which you would call from a C or Assembly language program, so for those of you who have no knowledge of either it's probably worthless. I would like to see a CLI command like PrintSpool. I can do this just by typing: SPOOL <filename>. Maybe someone could come up with a command like this soon – it would sure be handy and if you do, maybe you would consider releasing it into the public domain.

Useful utilities

On Fish Disk #479 this month there are a couple of small useful utilities. **Checkprt** allows you to check whether you have a printer available in your startup sequence. CheckPrt returns a failat value of 10 if a printer is not connected or off, and a value of zero if you're in luck and you remembered to switch it on. Small but useful.

Then there's **TDP**, a disk drive track display program which shows you where your drive's heads are when they're accessing the disk drive. Small hacks, but very useful if you do a lot of disk and printer work. You could install both these programs in your startup sequence.

Back in time

If, like me, you are a Commodore fanatic, graduating through the ages from the humble VIC-20 (remember that?), to the 64 and then on to the Amiga, you'll have enjoyed every minute of it. The VIC-20 was around at the time of the ZX-81 and Spectrum computers in the early eighties. It wasn't a very powerful computer, being equipped with only 3.5K of ram and a rather small screen size, but how I loved it.

Unfortunately, mine broke down and was replaced by the 64 a couple of years later, and what a machine that was! Eight sprites and three channels of sound. WOW!

If you had a 64 and came to love the machine you'll be pleased to know you can travel back in time and re-live the experience with the 64 emulator from AmigaNuts United.

It comes on disk #1030 along with a Spectrum emulator – but to what use you'll put that I cannot think! So, if you have any old 64 programs lying around that you would like to see running again, get hold of this disk.

Other bits

Most emulators, unless they are supplied with a microprocessor, are suited only to text-based applications, but I must say I have had DBASE III running under the PC transformer on the Amiga, albeit a little slowly, and it seemed to work OK.

I don't know how well the 64 emulator stands up, but you can contact AmigaNuts United on 0703 785680 with this or any other PD enquiry you may have.

For those who use Deluxe Paint regularly and use the WorkBench fonts a lot, you might like Polly Softs font disks. They contain a variety of colourful, attractive fonts which you can use in DPaint. There are small and large fonts, fonts of every colour and size, and some quite beautiful designs that will add more life to your DPaint creations.

Some of these fonts have been used in PD demos, and you may have seen them if you follow the demo scene closely. They could be included in your own creations, provided you have some knowledge of bitmap conversion.

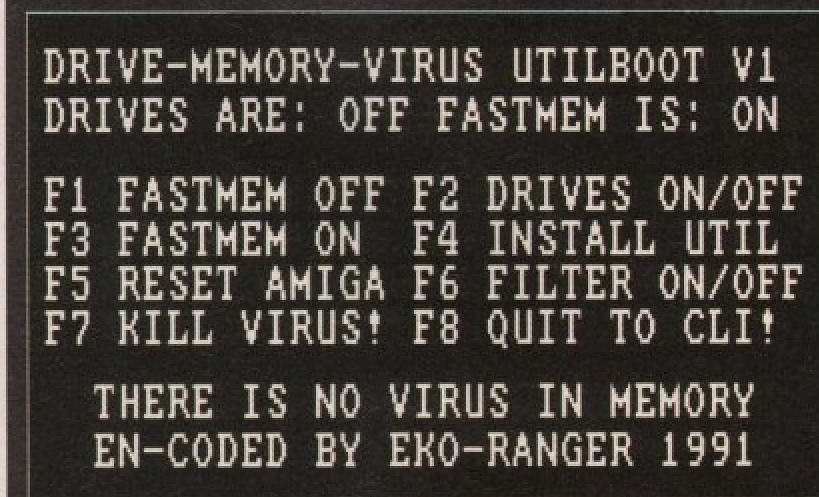
Big Brother

George Orwell's novel *1984*, predicted a gloom of oppression administered by the government and named Big Brother. Well now BigBrother is a program on Fish Disk #473 which monitors your Amiga system and alerts you to any dangerous viruses present in the memory.

It monitors the vectors that so many viruses change to perpetrate their nefarious deeds, and allows you to reset them if they change. In addition to this you can install disks, examine bootblocks, clear the memory, do a warm reset and execute script files.

It sits in the background in a so-called "sleep" mode and comes to life if it feels your happy, bubbly and smooth computing environment is threatened with virus infection. One complaint though – as I use a 1.3 machine, the contents of the DoIO vector have changed to that of earlier machines and as a result, BigBrother tells me so.

Ah! But one look at the documentation enlightens me. There should be a preferences file for BigBrother to operate in a 1.3 environment. I think this has been missed when collating material for the disk and you should try to get hold of it from the author. It should pose no problem for 1.2 users but if you use 1.3 you're in for a tantrum or two.

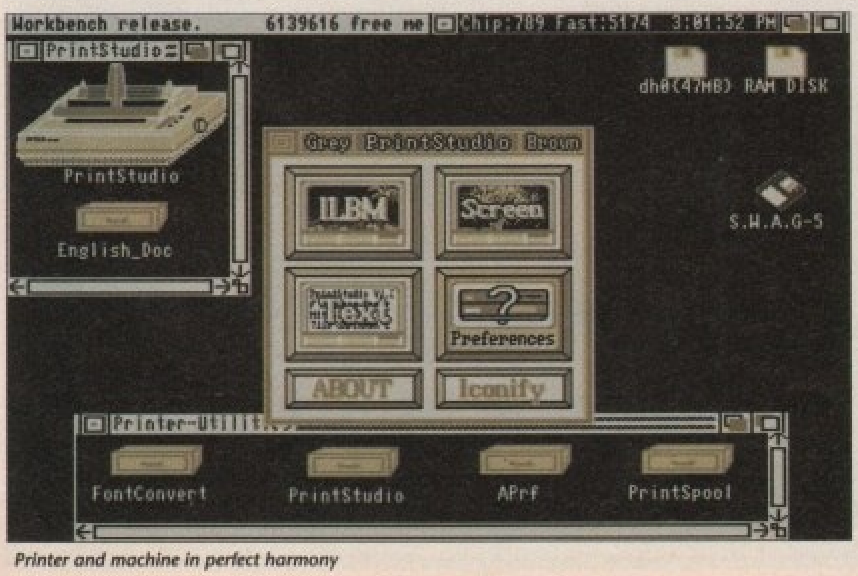


Viruses beware! Big Brother is watching

Famous last words

Should you purchase any of the above programs or indeed any public domain software, spare a thought for the author who has spent time and effort to make your computing experience an enjoyable one.

Listen to your conscience and send in the cash – after all it's a small price to pay to keep PD alive...



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D005 OBSCENE 5 (2 Disks) Naughty phone calls
D006 AGATRON SLIDES 1. Good slideshow
D007 X-WING ANIM (1 Meg) Another good one
D011 ANTHROX VIOLENCE DEMO. Funny & original demo
D012 REBELS MEGADEMO. Get this disk
D014 SPACE ACE DEMO (1 Meg) Cool!
D015 UGLY MUG GOES FOR A SPIN.
D016 X-WING 2 (1 Meg) Another good anim
D017 GHOST POOL (1 Meg) Check it out
D023 STEALTHY 2 ANIM. Amazing anim
D024 A.L.F. DEMO. Do the ALF rap
D028 BUDBRAIN MEGADEMO (2 Disks) Totally Fab, get it
D031 RAIDER OF THE LOST ARK ANIM (1 Meg) Brill
D032 JUGGETTE ANIM (1 Meg) The Juggler's wife
D033 OBSCENE 2. More obscene phone calls
D034 PORSCHE ANIM (1 Meg) Fantastic
D036 CAR CHASE (1 Meg) Amazing, get it
D037 GYMNAST ANIM (1 Meg) Very good
D039 FRACTAL FLIGHT (1 Meg) Wow!!!!!!!!!!!!
D041 AGATRON SLIDES 10. Amazing artwork
D045 ARSE WIPE ADVERT. He, he, he, very funny
D046 GARFIELD SLIDESHOW. Meeooww, good
D047 RAF MEGADEMO (2 Disks) Amazing Ghostbusters part
D048 END OF THE CENTURY MEGADEMO 2. A cool disk
D050 THE X-MAS SONG (2 Disks) (XXX) Hilarious
D052 WE WANT SOME PUSSY RAP (XXX) No comment, he, he
D054 FILLET THE FISH. Puggs in space style demo
D056 SCOOPEX MENTAL HANGOVER. Get this now!!!
D059 RED SECTOR MEGADEMO (2 Disks) Get this as well!!!!
D060 EDDIE MURPHEY DELIRIOUS (2 Disks) (XXX) Funny!
D061 EDDIE MURPHEY DELIRIOUS 2 (2 Disks) (XXX) Funny!
D062 RED SECTOR CEBIT 90. Get this one!
D064 PUGGS IN SPACE. Very good
D067 LOTUS & UNICYCLE (1 Meg) Now a classic anim
D069 NIGHTBREED SLIDESHOW. TV quality pictures
D070 SAFE SEX DEMO. Funny, but harmless
D074 DREAM PACK. Includes the amazing PO1 PO1 demo
D076 OBSCENE 3. Even more dirty phone calls
D077 GOOD MORNING VIETNAM. Yippee
D082 MONTY PYTHON " NUDGE NUDGE" (2 Disks/2 drives req.)
D086 HARD CRACK GRAPHICS. Nice music & piceys
D088 SILENTS MEGADEMO. Brill loader, just get it
D092 GOLDFIRE MEGADEMO. Get this or else!!!!!!
D095 OUTSIDERS ACID DEMO. One for acid freeks
D106 SCIENCE 451 MEGADEMO. Very good
D109 NO BRAIN, NO PAIN (2 Disks) Good
D111 CRUSADERS BACTERIA. Brill music
D118 CRIONICS MEGADEMO. Includes famous Maddonna demo
D127 CHUBBY BROWN (XXX) Funny disk
D129 INTUITION MEGADEMO. Good stuff
D134 SLIPSTREAM – GARFIELD DEMO. Check it out
D136 PUNK CROC CREW MEGADEMO. Includes NEIGHBOURS
D138 BRUCE LEE SLIDESHOW (3 Disks) Fans only
D145 FAST CARS SLIDESHOW. For fans only
D146 MAGICIAN & RUNNER ANIM (1 Meg) Good stuff
D147 NEIGHBOURS SLIDESHOW. With captions added. Funny
D148 VIZ CALENDAR SLIDESHOW. Good
D150 WINDSURFER ANIMS (1 Meg) (2 Disks) Very cool
D151 ROBOCOP 2 SLIDESHOW. For fans
D152 KIM WILDE SLIDESHOW. For fans only
D153 EPIC GAME DEMO (1 Meg) Brill, Fab, Amazing !!!!
D154 TOTAL RECALL SLIDESHOW. Fans only
D158 OPERATION VARK, OPERATION WOLF Look-a-Like
D160 EXODUS REAL 3D. Amazing 3D pictures
D163 PROBE SEQUENCE (1 Meg) Been on tele
D167 KNIGHT ANIM. Good stuff
D168 HORIZON MEGADEMO. Good
D169 BUDBRAIN MEGADEMO 2. Get it now!!!!!
D174 NEWTEK 1 (2 Disks/2 drives req.) Fantastic
D176 JASPER CARROT. Fans only
D177 NEWTEK 3 (2 Disks/2 drives req.) Yahoo!
D178 OBSCENE 1. The first of the series
D181 NASA PICS. Good slideshow
D184 DRAGONS LAIR 2 (1 Meg) Check it out
D185 WRATH OF THE DEMON DEMO (1 Meg)
D186 TEAM SUZUKI DEMO. Rolling demo of game
D187 BATMAN THE MOVIE (1 Meg) Good funny anim
D188 DEMONIAK DEMO (1 Meg) Good stuff
D189 SIMPLE STUFF. Good demos
D190 IRAQI DEMO (1 Meg) Very, very good
D191 COOL CARS. Amazing pictures
D194 PROLOGIC PARTY TIME. Sit back & be amazed
D205 WALKER 1 (2 Disks/2 Meg) The big one
D206 WALKER 2 (2 Disks/2 Meg) Another big one
D207 EQUAMANIA 2 & DRUNKEN SKULLS. Good
D209 TRON ANIM (2 Disks/1 Meg) Amazing, Brill
D217 SLYCATH DEMOS 1. 5 cool demos
D222 MAGNETIC FIELDS HYSTERESIS. Fantastic
D223 HAM INVASION. Amazing pictures
D224 ANARCHY SYSTEM VIOLATER. Mega cool
D225 SLYCATH DEMO COMP 2. 6 brill demos
D226 CRIONICS TOTAL DESTRUCTION. Brill
D228 TOP GUN DEMO (2 Meg/2 Disks) Good
D229 PHENONENA MEGA DEMO II, Brill!!
D231 2 Disks KGB MEGA DEMO, Amazing!
D237 SILENCE GLOBAL THRASH, Awsome
D243 SCOPEX DEMO DISK 132, 1 Meg includes a cool Simpsons demo

GAMES

G001 STAR TREK 3 (2 Disks) The Best
G002 SPACE BLITZ, Cool
G003 RETURN TO EARTH, Space trading!
G004 ADVENTURE GAMES, Text Adventures
G005 YELP, Arcade Game
G006 BREAKOUT CONSTRUCTION KIT, Good
G008 BOARD GAMES, Monopoly etc
G019 MIXED GAMES
G010 WHEEL OF FORTUNE, Like TV Prog
G011 YAHZEE, Popular dice game.
G014 BUCK ROGERS, Shoot-em-up
G015 STAR TREK (3 Disks/2 Drives Req) Cool
G016 TENNIS (1 Meg) Includes speech
G017 PSEUDO COP GAME, ED209
G019 PARANOID, Breakout game
G020 TRAIN CONSTRUCTION SET, Good fun

MUSIC

M002 ROGER RAMJET RAP. Long & good
M006 HE SWEARS A LITTLE BIT (2 Disks/2 drives req.)
M011 D-MOB MUSIC 2. Cool music
M012 D-MOB MUSIC 4 (2 Disks) Good music
M013 ENEMIES MUSIC 3. Some great music
M014 REBELS MEGABLAST. Robotic style tunes
M020 NEWTONS MUSIC DISK. Great equalizers
M021 KYLIE MINOGUE " MADE IN HEAVEN" (2 Disks)
M022 AMIGA CHART MIX 3. Good music
M023 TITAN TRAX 1. Great, beaty music
M024 CRUSADERS FREEKED OUT. Well ard disk
M025 H.C.C. JARRE SHOW. Get it
M026 AMIGA CHART MIX 5. More brill music
M028 COMIC STRIP. Nice silly songs
M029 D-MOB MUSIC 3. Good stuff
M030 VISIT TOXTETH. Take a trip to Toxteth
M031 POPEYE MEETS THE BEACHBOYS. Funny
M033 DEREK & CLIVE (2 Disks/XXX) Funny
M034 TOTAL REMIX (2 Disks) Very funny
M035 DIGITAL CONCERT 2. Get it now!
M036 DIGITAL CONCERT 3. Get this as well!
M037 DIGITAL CONCERT 4. And this!
M038 DIGITAL CONCERT 5. As above
M039 DIGITAL CONCERT 6. As above, as above
M040 RAF MEGA MIX 1. Cooool!!!
M042 BAT DANCE REMIX. Nice
M045 MIAMI VICE REMIX. Good
M048 SOUND ATAX. Plenty of good tunes
M049 BEN ELTON. Very funny
M051 POWER REMIX. Nice disk
M054 SOUND OF SILENTS. Good stuff
M055 GET UP. Cool long sample
M057 D-MOB MUSIC 1. Good
M061 DEPECHE MODE MUSIC. Fans only
M062 RAVE BY HACKTRICK (1 Meg) Acccidd
M064 SOUND ATAX 2. 10 cool songs
M070 SCOOPEX'S BEAST MUSIC. Brill
M072 H.C.C. MUSIC DISK 1. Very good
M075 100 GREATEST C-64 TUNES. Brill
M077 BOMB THE BASS. Well ard
M081 FLASH (2 Disks) by Queen
M091 4-MAT MUSIC. Cool music by 4 MAT
M102 DEBBIE GIBSON (2 Disks) Electric Youth Sample
M105 ALIEN NATION. Aural Ectasy. Good beaty stuff.
M112 JARRE REVOLUTIONS. Cool Jarre Music.
M114 BETTY BOO! Just doing the do.
M116 LAND OF CONFUSION by Genesis
M120 HEAR THE DRUMMER. Get wicked
M121 BAND AID 2 (2 Disks) Long sample
M125 RAF Megamix 2 (2 Disks) Mega Cool
M126 AMIGA CHARTS 2. Nice music mix.
M127 AMIGA CHARTS 6. Very Good
M134 MIAMI VICE THEME (4 Disks). Very long
M136 LAUREL & HARDY (2 Disks/2 Drives). Fans only
M138 SIMPSONS - DO THE BART MAN (3 Disks) Cool
M140 MADONNA, Justify my Love. Good
M141 DIRTY DANCING. Nice music sample
M142 AMAZING TUNES 2 (1 Meg/3 Disks) Brill, Get it.
M143 TWIN PEAKS THEME, Fans only
M147 JARRE LIVE. 11 cool songs
M154 DON'T TOUCH IT. Funny song
M156 POWER OF LOVE (2 Disks) Long sample
M157 808 STATE REMIX, Good weird music
M158 STUDIO MUSIC 1, 15 cool tunes
M159 STUDIO MUSIC 2, 12 cool tunes
M160 STUDIO MUSIC 3, 11 cool tunes
M161 STUDIO MUSIC 4, 12 cool tunes
M162 STUDIO MUSIC 5, 12 cool tunes
M163 STUDIO MUSIC 6, 17. yes, 17 cool tunes
M164 STUDIO MUSIC 7, 15 cool tunes
M165 STUDIO MUSIC 8, 9 cool tunes
M166 STUDIO MUSIC 9, 15 cool tunes
M167 STUDIO MUSIC 10, 11 cool tunes
M168 STUDIO MUSIC 11, 14 cool tunes
M169 STUDIO MUSIC 12, 16 cool tunes
M170 STUDIO MUSIC 13, 13 cool tunes
M171 H.C.C. MUSIC Disk 2, Includes ED THE DUCK.
M173 CRUSADERS DOES GENESIS, Fantastic
M174 SILENTS - Blues House (2 Disks) Get this Now.
M176 SPACED OUT 2, Wicked

UTILITIES

U002 U-EDIT WORD PROCESSOR - Good stuff
U004 SOUNDTRACKER COLLECTION (3 Disks) Brill
U006 COPY & CRACK TOOLS, Handy
U008 DARKSTAR UTILS 6, Boots, Copiers & Packers
U009 DARKSTAR UTILS 5, Rippers, Virus Utils & More
U010 GHOSTWRITER & RAINBOW WRITER, Make your own demos
U012 MEGA UTILS, 175 Utils & some Docs
U014 FLEXY BASE, Powerful Database
U015 GRAPHICS UTILS, Sprite editors & Docs
U016 C MANUAL (3 Disks) Complete programming language
U020 DOPE INTRO MAKER, Good stuff
U021 ULTIMATE ICON DISK, Lots & Lots of Icons & Editors
U023 WARRIORS CRUNCHER DISK, Loads of packers
U024 SID CLI UTILITY, Very Very Good
U025 M CAD, Computer Aided Design
U029 BACK UP UTILITY, Copier
U030 GAME MUSIC CREATOR, Soundtracker look-a-like
U031 SPEEDBENCH, Faster loading Workbench
U032 FONTS VOL2, Loads of good fonts
U033 CLIP ART FONTS, Use with your art packages
U038 ALPHA FLIGHT DEMO MAKER, Needs CLI knowledge
U039 AMIBASE 3.76, Cool database
U040 FONTS VOL1, Load of fonts
U042 FONTS DISK, Even more cool fonts
U043 R.I.M. DATABASE, Good
U044 MOBED, MOveable OBject EDitor, Cool
U047 JAZZBENCH, Better workbench
U048 VC SPREADSHEET, Good
U059 CLIP ART, Use with art packages
U062 ULTIMATE COPY & VIRUS KILLER DISK, the best
U063 CLIP ART, Animals, carton, people & more
U064 CLIP ART, Transport, people, buildings & more
U065 PAGESETTER CLIP ART, B&W art, works with art packs
U066 C-LIGHT (1 Meg), Ray tracing package
U069 NORTH 'C' 1.3 (2 Disks), The latest version
U070 PASCAL, PCQ 1.1
U071 METALION UTILS, Font designers & more
U072 RIPPERS DISK, The best rippers disk around
U073 SAMPLE EDITOR, Good
U074 SOUNDTRACKER, 8 Channels, Wow!
U075 TECHNO HIP HOP SAMPLES, Use with Soundtracker
U076 MASTER VIRUS KILLER 2.1, The latest version
U080 ST03, Instruments for Soundtracker
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Infernal internal!

I have had my B2000 for about two and a half years, and at first I was full of praise for the Amiga.

About 10 months ago, however, I started getting messages about read/write errors (Argh! – Ed), floppies not being validated (Eeek! – Ed), and using DiskDoctor (Groan! – Ed). These appear intermittently, such that a disk might work once, then five minutes later prompt a host of errors.

The result was that I couldn't use my Amiga for hours on end, and even then had to wait until the following day to use it again. Any disk can succumb to the dreaded messages, and the same disks work perfectly on an A500.

I have tried every virus killer I can find, but they come up with nothing, so in desperation I sent the machine to be repaired, only to be told that there was nothing wrong with it!

Please help before I'm forced to buy an Atari!

Andy Hamilton, Dalkieth

Hmm – desperate though you may be, there's no need to sink to the level of an ST.

You say the disks work in an A500 but not the 2000, so the disks aren't at fault. This also suggests that the problem isn't simply one of drive alignment. If the A500 can read disks from the B2000, the latter's write function can't be too badly out of step.

It sounds like the internal drive on the B2000 is, to use a technical term, fritzed. The first thing to do is to send your machine to a reputable repair company. It sounds like the one you used took no more than a cursory glance at the Amiga. Our repair feature in the June issue highlights a few of the better companies.

Remember to include as detailed a note as you can on the problems you've been encountering.

Clocked out for good?

I bought a ram expansion a week after I bought my Amiga, and at first I set the clock from preferences. After a while, however, I decided to try this operation from CLI.

I opened up the CLI, set the clock, pressed Return, and got a "Battery Backed-up Clock Not Found" message. I did the same thing three times with the same reply, got fed up, and decided to reset the Amiga.

The next thing I see upon resetting is the Workbench prompt (the hand holding the disk) flicker and disappear as if I'd just lost the reception on my TV. I tried to re-tune it, but couldn't.

In the end, I turned off the computer and came back about an hour later, but the result was the same – no Workbench screen. The power light is on and the drive light now goes without the drive motor making any noise, but the drive doesn't do anything when I put a disk in.

I don't know if it's a virus or bad luck or what, but I need HELP!

Murmitaz Arif Qadeer, London

Try taking the ram expansion out and booting the Amiga again. If, as sounds likely, the card is duff (the on-board clock certainly doesn't work) it might be stopping the Amiga from booting up because the memory isn't configuring.

If this is happening, the machine might be locking up when it does its system checks. We once had a 2000 do that because one leg of one chip out of 32 on a ram board was out of its socket.

If the Amiga refuses to budge with the ram card removed, the only option is to send it for repair.

Sizeable problems

I have a Citizen 120D printer and my stationary is A4 paper. My printer, however, can only print on 11in or 12in paper depending on a DIP switch setting. Consequently, I cannot print to top of page, no matter how hard I try.

I believe it can be done, perhaps through printer escape codes, but unfortunately I am unable to locate the correct ones. I was hoping to encode the changes on Workbench through the startup-sequence or preferences, but I'm not sure how it is done.

Is there any way to edit or browse through a binary file using Shell or some other package?

Could you tell me if the Bench 2.0 demo on the April coverdisk is supposed to do anything but disintegrate the screen?

R B Lavender, Polesworth

The printer driver itself is written so that the full A4 paper size is 11in, so even if you have the correct printer driver set in your Workbench preferences, you will only be able to print to that length.

You can examine and edit a machine code file using a hex editor such as the shareware program NewZap. However, unless you are a machine code programmer this will be of little use to you.

Fortunately your ever-helpful coverdisk next month will include Jorgen Thompsen's excellent (if a little daunting) shareware program Printer Driver Generator (PrtDrvGen). With this, you can either

Picking the right sort of drive

I have had my A500 for six months and I would like to expand it. I already have a 1 meg upgrade but I am considering buying an external disk drive.

Could you tell me which one does the best job for the cheapest price? Also, could you tell me which is the best PD C compiler?

Where can I get the A1500 expansion kit? I have also heard of a similar expansion kit called Bodega Bay. Where can I get information on this and how much will it cost?

John Hatwell, Templecombe

There are many makes of external drive available, and most are as good as each other. Make sure the one you pick has an enable/disable switch and a throughport and you shouldn't go too far wrong.

Most of them use mechanisms from one of a half dozen or so Japanese manufacturers, so are identical on the inside in any case, but we did once have a drive with an NEC mechanism which was both reliable and very quite.

The best PD compiler is probably Sozobon C, available on Fish Disk 340 under the guise of North C.

The A1500 kit is available from Checkmate Digital (071-923 0658) for £230. The Bodega Bay unit will soon be available from Amiga Centre Scotland (031-557 4242) as soon as a price is settled (it's $350 in the US).

We would recommend neither unit unless you are a confirmed A500 fan. The best path at present for an upgrader is to sell the A500 (you should be able to get £300 to £400 depending on how much software you flog with it) and chip in the difference for an official Commodore A1500.

Tin box blues

I would like to ask a few questions about the possibility of expanding the A500 further up the Amiga ladder.

- Is there an external board for the A500 that permits us to make use of A2000 add-ons?
- If it exists, does it support full size cards?
- Can any of the slots make use of PC cards? (I have a Vortex ATOnce installed)
- What is its price, where can I get it, and is it worth buying?

Stephen Scerri, H'Attard, Malta

Another aspiring A500 owner! To answer your questions one at a time,

- **Yes, the main contenders being the Checkmate Digital A1500 and California Access's Bodega Bay unit.**
- **The Bodega Bay has four Zorro II slots (Zorro II is the standard Amiga 2000 expansion slot) and the A1500 can be given a half-length card slot for £69. With the addition of the imminent Overrider box, the A1500 will have two full-size slots.**
- **Three of Bodega Bay's slots are PC compatible.**
- **The A1500 base unit is £230, and a half-length card is a further £69. Phone Checkmate on 071-923 0658 for details of the Overrider box. Information on Bodega Bay (which costs $350) is available from Amiga Centre Scotland (031-557 4242) or direct from California Access on (0101) 408 378 0340. As I said earlier, these upgrade options are really only suitable for the A500 owner who either detests the thought of parting with his or her machine, or who has a large range of expensive A500-specific peripherals.**

If I had to plump for one option, I'd go for Bodega Bay, as it has four full-length slots and a built-in power supply for the extra hardware. The A1500 unit, on the other hand, has the advantage of being cheaper and more readily available.

create your own printer driver from scratch or, more usefully, modify existing Workbench drivers to suit your needs.

By manipulating the values in fields 28 to 31, which contain settings for the custom paper size, you can decide exactly what size of paper your printer will print on to the nearest 0.01 inch.

A590 horrors

My A590 has been soldiering on now for about two years, and apart from a steady increase in the noise from the cooling fan, it has given me little to worry about – until last week!

I was half way through a long de-archiving process involving an archive of some 24 files, when the system locked up with my very first read/write error. Help!

Paul Flannelin, Blarney, Ireland

Don't worry too much – read/write errors will happen on old drives. You should be able to save most of your files with FixDisk, and patch up your read/write error. We'd also suggest you make back-ups from now on.

Multilingual Amiga

I am a student working towards a degree (hopefully!) in computer science, so as you'd guess my budget is limited. I work at college on a DEC mini network, and use a variety of languages including Fortran 77.

Could you suggest a Fortran package for the Amiga in the public domain? It doesn't have to be any great shakes, just so long as I can do my 'homework' on the A500, then carry on at college on my terminal.

The ability to use the same files on either machine would be a bonus, but I'd be prepared to forego this feature.

Also, I program in Pascal on my 286 AT and would be interested in a Pascal compiler on the Amiga.

J Parker, Paisley

You will find the BCF Fortran compiler complete with linker and runtime library on Fish Disk 470, one of the most recent Fred Fish releases.

It claims to be a standard implementation of Fortran, so it should be compatible with the version you use at college. Any uncompiled Fortran Ascii source should be easy to port from machine to machine, but how you'll get it into a DEC network we leave to you to sort out!

To transfer files from Amiga to PC is easy enough using CrossDos, Dos-2-Dos, or the PD program MessyDos (Fish 357), so you'll have no problems working on the AT with Ascii source generated on the Amiga, or vice versa.

As for a PD Pascal compiler, you could do worse than try PCQ, which you'll find on page 56 of the Akore shareware catalogue. We gave the catalogue away free with our June issue, but if you didn't get it, you can order PCQ by phoning 0800 252221 and asking for disk UT4144.

Star performer

Last year I bought a black and white LC24-10 dot matrix printer and since then I have heard of colour conversion kits that allow you to change your printer to full colour. Please tell me more about these kits.

Are they available for the Star LC24-10? How much do they cost and are they difficult to install?

Also, I am very interested in PD music programs, especially MED. Is there any way that finished songs could be output clearly to cassette tape?

Philip McDonald, Sunderland

I'm afraid to say the Star LC24-10 does not have a colour upgrade option, unlike the LC10 which can be upgraded easily and quite cheaply.

The Amiga's stereo output can be taken directly to tape from the two jack sockets at the rear of the A500, though for the best quality you might want to use an amplifier or mixer and take the signal down so it won't overdrive the tape. In other words, you can treat the Amiga as just another music source.

Expanded to the limits

I am the owner of an A500 with a standard internal half meg expansion board (no Gary board) and an A5000 accelerator card. Since I use my machine for ray tracing a lot, I find that I run out of chip memory a lot.

Mine is an old issue 1.2 A500 with an old Fat Agnus. I have heard that there is a hardware modification to the motherboard to enable the use of a full meg of chip ram with a Fatter Agnus, and I was wondering exactly what this modification is.

Will there be any problems with the A5000 board either physically (it is quite large) or in terms of DMA conflict?

I would also like to know how I could use an FPU such as the 68881 if I installed it on the board. I know that some programs detect and use it automatically, but as I code my own ray tracing software I would need some way of doing this myself.

If I could make my ray tracer friendly enough, would you want it for the coverdisk? As a last question, I have heard much about Real 3D, but always the Pro version. What is missing from the Beginner's version to make it so much cheaper?

Barnaby Madgett, Leighton Buzzard

On old Amigas the motherboard modification is a bit of major surgery we can't go into here. Needless to say, cobbled-up hardware projects are a hit-and-miss affair which the soldering iron brigade love, and Commodore (not to mention almost every engineer) hates.

Newer revision 6A boards actually have spaces for a further half meg of chip RAM which you can solder on yourself, but you are warned that this will render your trapdoor expansion slot useless for further memory expansion purposes. Commodore's technical bods recommend you stay well away from it, and I heartily agree with them.

On a slightly more positive note, you can use one of the trapdoor boards which utilise the Gary chip connection, but as you rightly suspect, these can physically clash with the A5000, which spreads over the top of the Gary chip.

The ICD AdRAM board is one we definitely know to be incompatible with the A5000, but there may be others which aren't. Check carefully before you buy.

Finally, your questions on Real 3D should be answered by this month's in-depth ray tracing head-to-head feature.

No way, Pal!

I am emigrating to Canada shortly, and will obviously be taking my Amiga. What changes to my set-up will I need to make for NTSC, the 110 volt supply, and so on?

Will my existing PAL software purchased in the UK run in Canada? Also, could you suggest a UK distributor where I can obtain the necessary hardware, like a new power supply and TV modulator, if these are needed?

Nick Glover, Brighton

No you won't be taking your Amiga! Sell it here and buy a new one in Canada – it's an involved and tricky hardware project to convert an Amiga from PAL to NTSC and it's not worth the bother.

The power supply problem is easily solved with a transformer which you should be able to get in most electrical shops (try Tandy), but the Amiga's internal architecture is another thing altogether.

In addition, all software which opens up a full PAL screen will not work on NTSC machines, so you'd be best to sell such titles along with the Amiga. Hang on to those which open in NTSC mode (with a black area in the bottom fifth of the screen) as these will work on your new NTSC Amiga.

Sorry about the bad news, but we didn't invent the incompatible standards, and neither did Commodore.

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APD5. FONTS DISK 3 (AFT)
APD6. STOS TO AMOS (UT)
APD7. VIRUSX 4.0
APD8. MUSIC & SAMPLES 1 (MA)
APD9. AMOS BIG DEMO V4 (DEM)
APD 10. SAMPLES 2 (MG)
APD11. SAMPLES 3 (MG)
APD12. SAMPLES 4 (MG)
APD13. SAMPLES 5 (MG)
APD14. IFF PICTURES 1 (AFT)
APD15. IFF PICTURES 2 (AFT)
APD16. IFF PICTURES 3 (AFT)
APD17. INSTRUMENTS ST-01 (MG)
APD18. INSTRUMENTS ST-02 (MG)
APD19. MICROMAN'S MUSIC SENSITIVE BALLS (DEM)
APD20. ARC ANGEL DEMO 1 (DEM)
APD21. WORD SQUARE SOLVER GAMES (GAME)
APD22. FUN SCHOOL III (DEM)
APD23. ST MODULES 1 (MG)
APD24. ST MODULES 2 (MG)
APD25. ST MODULES 3 (MG)
APD26. ST MODULES 4 (MG)
APD27. ST MODULES 5 (MG)
APD28. ST MODULES 6 (MG)
APD29. ST MODULES 7 (MG)
APD30. ST MODULES 8 (MG)
APD31. SCREEN DESIGNER (UT)
APD32. AMOS PROGRAMS (AMOS)
APD 33. PINK GOES APE (DEM)
APD34. LUKE MILLER'S MUSIC 1 (MA)
APD35. ARCHIVIST (UT)
APD36. AMOS UPDATE V1.23 (UT)
APD37. ARC ANGEL DEMO 3 (DEM)
APD38. IFF FONTS (AFT)
APD39. MUSIC 2 (MA)
APD40. MUSIC 3 (MA)
APD41. MUSIC 4 (MA)
APD42. MUSIC 5 (MA)
APD43. MUSIC 6 (MA)
APD44. MUSIC 7 (MA)
APD45. MUSIC 8 (MA)
APD46. MUSIC 9 (MA)
APD47. MUSIC 10 (MA)
APD48. MUSIC 11 (MA)
APD49. MUSIC 12 (MA)
APD50. MUSIC 13 (MA)
APD51. WEIRD SCIENCE (DEM)
APD52. FORMS REALLY UN LTD (UT)
APD53. CUROS & STAVROS MEGA DEMO II (DEM)
APD54. APD54. AMOS PROGRAMS (AMOS)
APD55. SAMPLES 6 (MG)
APD56. SAMPLES 7 (MG)
APD57. SAMPLES 8 (MG)
APD58. SAMPLES 9 (MG)
APD59. QUIZ GAME (GAME)
APD60. HOCKEY PISTA (DEM)
APD61. LUKE MILLER 2 (MA)
APD62. ARCADIA (GAME)
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APD64. ART PROGRAMS & OTHER AMOS PROGS (UT)
APD65. AMOS PROGS (AMOS)
APD66. MUSIC 14 (MA)
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APD68. MUSIC 16 (MA)
APD69. MUSIC 17 (MA)
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APD71. MUSIC 19 (MA)
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APD73. MUSIC 21 (MA)
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APD75. MUSIC 23 (MA)
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APD80. INSTRUMENTS ST-04 (MG)
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Devices and desires

Jason Holborn checks out two genlocks that won't reduce your bank manager to tears

When Applied Software and Peripherals (ASAP) launched their MiniGen genlock onto the Amiga market almost three years ago, it set new standards in price versus performance. Up until then even the most basic of genlocks would have set you back over £250, but ASAP's unit cut that price by over £150.

Cheap it most certainly was, but its quality still left a lot to be desired. OK, it did the job, but that's as far as it went. Not only that, but picture quality was hideous with signal tearing and blurring left, right and centre. Straight lines came out warped and blurred, and colours bled more than in the latest designer fashions.

Spotting an obvious gap in the market, two companies have released genlocks which look set to put an end to ASAP's monopoly for good. No longer does cheap mean underpowered – you can now produce high quality video productions without having to break the bank. But how do you decide which is best?

The competition

Roctec Electronics are a pretty big name in the disk drive market, but have only recently begun to break into the Amiga market. Their first major release for the Amiga is the RocGen RG300C, a nifty little genlock with a very impressive price tag. It has all the functions you'd expect from an Amiga genlock, plus full fade and dissolve controls.

Providing the competition is HB Marketing, a company which should be familiar to just about all Amiga users. They've been importing and distributing serious Amiga products for years now, giving UK Amiga users the opportunity to play with Amiga products from across the globe. Their latest aquisition is the imaginatively named PAL Genlock.

Unlike the RocGen unit, HB Marketing's Genlock isn't a new product. As soon as I saw it I thought to myself, Oi! This looks familiar. And, lo and behold, I was right. It's none other than my old friend the Rendale 8802, a classic little genlock. If you'd bought this baby just a few months back it would have cost you £260!

Licensing the guts of the Rendale genlock is a pretty shrewd move, but I'm surprised that HB haven't made more of the Rendale name. Personally I would have played it up as much as possible.

Just like its forerunner – and just about every other external genlock – the HB Genlock connects to the Amiga via the RGB video port. It also has a 23-pin passthru connector so you can still connect your Amiga monitor directly to the RGB output of your Amiga without loss of picture quality.

Obviously you won't be able to view the genlocked signal this way, but to solve this problem connect the Composite Out from your destination deck to the CVBS In on your monitor. This way you can view both the RGB and genlocked signals at the flick of a switch. As you'd expect from a genlock with such a good pedigree, the image quality of the PAL device matches up to those costing hundreds of pounds more. It's certainly a lot better than MiniGen, but then you'd have to try pretty damned hard to produce one that isn't!



The RocGen or the PAL? Both provide incredibly good value for money

The RocGen has pretty much the same features as the HB Genlock, but the one thing that makes it so special is that it isn't restricted to overlaying Amiga graphics onto a composite video signal.

The RocGen features both fade and dissolve functions which allow you to fade out your genlocked graphics gradually, leaving just the composite video signal, or vice-versa. A very nice touch which is sure to gain the RocGen many friends.

One of the first things I noticed about the RocGen is that it doesn't feature an RGB passthru connector, an unfortunate omission. As a result you can't really leave the genlock plugged in permanently because the picture quality, although good, isn't quite up to the same standards as pure RGB. It's fine for video work but I wouldn't want to word process with it!

Obviously the greatest selling point of the RocGen is its fade and dissolve controls, but even these have a few annoying problems. For example, when you turn the knob so that the Amiga image is completely faded out, you can still see it ever so slightly ghosted over the video image. This isn't too noticeable once the image is laid down on tape, but it's still annoying.

Another gripe I have is with the control knob itself. Although the knob turns almost 360 degrees, the image doesn't actually fade in or out until the very last 45 degrees. As a result the transition is rather too severe. It would have been nice if this had been less extreme, perhaps requiring at least a 180 degree turn of the knob before the image appeared or disappeared completely.

Gripes aside, the picture quality of the RocGen seems better on the whole than the HB Genlock, which is really going some. If you then chuck it through a PAL Encoder, the results that are obtainable are pretty damned impressive.

The RocGen doesn't come with any form of software at all, which is surprising. I would expect at the very least to receive a few test images – which is all you get with most genlocks – but no such luck. Personally I wouldn't be too concerned about this, mainly because most of us have something like a paint package anyway.

HB Marketing have very cleverly decided to bundle GeniSoft's acclaimed Home Titler package with their genlock. For those of you who haven't seen it, Home Titler was reviewed in the May issue of *Amiga Computing* so I'll skip the detail. Originally released a few years back under the name of Video Generic Master, Home Titler has aged very well indeed. It's not quite up to the same standards as something like Broadcast Titler, but then what do you expect?

The last word

Both genlocks represent a breakthrough in value for money. There are very few genlocks below the £500 mark that can honestly claim to offer anything substantially better than these two units. Sure, you might get better quality, but connect up a PAL Encoder to your system and you'll really have a desktop video system worth boasting about.

In the end though, there can be only one. If I had to choose between one or the other, I must admit that – despite the fact that I'm a fan of Rendale genlocks – I'd have to plump for the Roctec unit. The thing that really won me over was its powerful fade and dissolve controls, but it wins hands down in just about every other category too!

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Artist's Impressions

Margaret Stanger brings art to your screen

Until now the display area on your Amiga's screen has been covered in boring stripes. Now this column gives you the technology to read in a Dpaint masterpiece of your choice and arrange any part of it tastefully onscreen.

Although it is possible to use the Amiga Gels routines to transfer blitter objects, I find it quicker and far less of a hassle to copy picture data using the BltBitMap command.

Last month a primitive graphics viewport was set up using a bitmap structure with information about its bitplanes. It is possible to set up another of these bitmap structures elsewhere in memory as long as there is room for all of its bitplanes. This backup set could contain some offscreen images that could be copied to the display screen when needed.

There is a useful command to copy a rectangle from one bitmap to another. It is necessary to specify the address of the source bitmap, the x-offset of the source rectangle and the y-offset, the address of the destination bitmap, the x-offset and y-offset of the destination, the horizontal size in pixels, the vertical size in pixels, the minterm or logic function, the mask or combination of planes to be transferred, and the buffer used to hold information if source and destination overlap.

Today the minterm will be 192 ($C0 for the techies) in order to copy straight from source to destination.

Reading the piccy

I prefer to store any picture in compressed form and save disk space. My file reader looks for BMHD, the bitmap header with the relevant sizes and the compression flag; CMAP, the colours used on the picture; ABIT, the main data for an ACBM picture; and BODY or bitplane data.

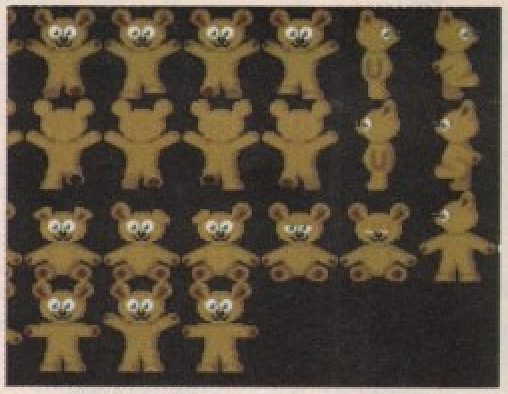
If there are a lot of pixels of the same colour the data may be compressed to save disk space. The usual algorithm is to use a flag to indicate whether the next few bytes are to be read individually or cloned. For example, where the next byte is n, "If n<128 read in the next n+1 bytes, if n>128 the the next n+1 bytes are the same".

I wrote a general purpose file reader that could be accessed from any C or Assembler source module. The picture filename, destination bitmap, and the colourlist form the input parameters for the routine.

```
readfile(name,bitmap,colourlist)
```

reads an ILBM or ACBM file where *name* is the address of the filename, *bitmap* is the address of the bitmap structure to be used assuming this bitmap is initialised and the rasters correctly allocated, and *colourlist* is a pointer to where the colours are to be stored, for example, colourlist: ds.w 32 for 32 colours.

The module assumes that the file is present, and is ILBM or ACBM and that the bitmap and colourlist are OK. When these conditions are met the module will read in the named picture file, unscramble it, put it in the chosen bitmap, and put its colours into your colourlist.



Cute and cuddly coding!

Connecting up

Calling a C module from Assembler source gave me a bit of grief at first. Anyone with Sozobon C would be well advised to compile the C code to Assembler source code and avoid most of the problems.

I used the -u underscore option when linking from an assembled object module to a C module. I also found that the program would not run if I used the a4 register at all, even if I preserved it at the beginning and restored it at the end. I used the Lattice Assembler, so the DevPac syntax may be different. The routines called in Assembler from the C module had to be declared as external references, and the linker also needed _main declared as an external reference.

```
XREF  _test2
XREF  _readfile
XDEF  _main
```

The C source module expected to have its parameters passed via the stack.

```
move.l  #filename,d0  ;in this case piccy
move.l  #BMscene,d1   ;initialised bitmap
move.l  #colourlist,d2 ;list for colours
movem.l d0-d2,-(sp)   ;push registers
jsr     _readfile     ;read the iff file
                     ; using C module iffread2
movem.l (sp)+,d0-d2   ;pop registers
```

The program, pix, calls an Assembler module, stix. Any variables likely to be used by other modules have to be defined as external references. Stix declares:

```
XDEF _xmove
XDEF _ymove
XDEF _xmove2
XDEF _ymove2
XDEF _fire
XDEF _fire2
XDEF _playsig
```

for use in other modules.

Pix has to use XREF for all these variables from stix. If only Assembler modules were being linked, the underscore option would not be needed. Pix and stix were assembled using makefile:

```
asm -iassembler_headers/ -u pix
asm -iassembler_headers/  -u stix
blink with pixlink
```

and linked using pixlink:

```
FROM
LIB:c.o+"pix.o"+"iffread2.o"+"stix.o"
TO "pix"
LIB LIB:lc.lib  LIB:lcm.lib LIB:amiga.lib
BATCH
```

Vital disk

The support disk contains a program, pix, that will read in a picture file or piccy. The picture data will be displayed on the screen, and the top half of the screen with its selection of teddy bears will be used as the source bitmap. The joystick ports are read, and the appropriate teddy is copied to the destination bitmap on the bottom half of the screen.

To smooth the movement out a little, there is a short delay before the joysticks are read again. The program will exit when a fire button is pressed.

```
jsr      _playsig   ;joystick routine
  clr.l   d0
  add.l   _xmove,d0
  add.l   _xmove2,d0
  tst.l   d0          ;xtest
  beq     vertical
  blt     left
  move.l  #74,d1      ;teddy looking right
  move.l  #192,d0     ;source y co-ord
  bra     out
```

To move left:

```
move.l  #74,d1      ;teddy looking left
move.l  #288,d0     ;source y
bra     out
```

To move vertically:

```
move.l  #0,d1
move.l  #0,d0       ;source xcoord
add.l   _ymove,d1
add.l   _ymove2,d1
tst.l   d1          ;ytest
beq     out
blt     down        ;teddy, arms raised
move.l  #0,d1       ;source y
```

To move down:

```
move.l  #74,d1      ;teddy sitting
out:
lea     BMscene,a1 ;destination bit map
move.l  #0,d2       ;destination x co-ord
move.l  #185,d3     ;destination y co-ord
move.l  #32,d4      ;width
move.l  #37,d5      ;height
move.l  #$c0,d6     ;minterm
move.l  #$ff,d7     ;mask
move.l  #0,a2       ;buffer
lea     BMscene,a0 ;source bitmap
move.l  graphicsbase,a6
jsr     LVOBltBitMap(a6) ;copy the teddy
```

Also on the disk is the fully documented source of the main program (pix.a), the joystick reader (stix.a), and the IFF picture reader (iffread2.c). Any code quoted on this page is not stand alone, so I would advise using the support disk rather than using the Machine Code page.

I have also included the make and link files which may need altering slightly for other assemblers, the object files and finally, the picture data.

COMING SOON......more blobs, masking, double buffering.

Passport to nowhere

Jason Holborn continues his quest to bring you the hottest news from the Amiga music scene

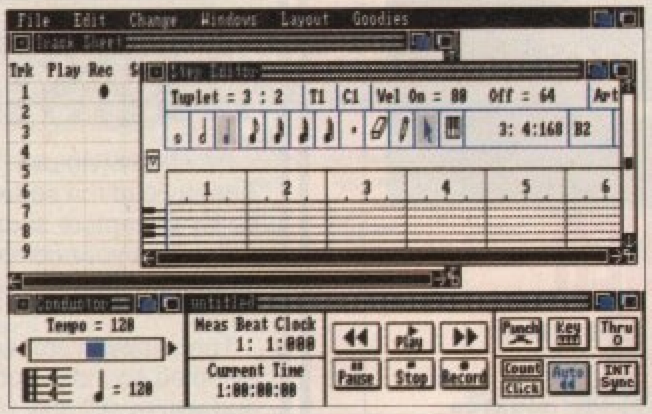
While everything around it is thriving, the Amiga music market has suffered yet another blow with the shock announcement from US-based Passport software that development has ceased on all its Amiga products.

This comes in the wake of MicroIllusions' recent announcement that it, too, has put an end to its successful Amiga Midi sequencer, Music-X.

This effectively means the end of Passport's Master Tracks Pro sequencer and its great little budget sequencer, Trax. We almost certainly won't see improved versions of these two products, but Passport still plan to fix any major bugs that appear in either (I should hope so, too!).

According to UK distributor MCMXCIX (081-963 0663), Passport have decided to leave the Amiga market to concentrate more on producing music products for the more profitable Macintosh and PC platforms.

With the dominance of these two machines within the American music market, even the ST has taken second place. Indeed, it is believed that the ST's dominance of the UK music market was the only thing that stopped it from facing the same fate.



Master Tracks Pro

So what has become of the Amiga Midi market? Has it had its day? Did it ever has that day? It seems to me that the Amiga never quite achieved its full potential as a Midi controller due to the lack of decent software and some pretty lousy marketing from Commodore.

Products like Music-X and Master Tracks Pro are all very nice, but they hardly compare with similar products on machines like the Mac and even the ST – just compare something like Steinberg's Cubase or the C-Lab Creator series with any Amiga sequencer and you'll see what I mean.

Lousy marketing is also another problem which the Amiga has had to suffer. With the machine's obvious strengths in the video industry, Commodore would have been well advised to have pitched the Amiga as an audio and video post-production workstation, allowing users to pull together the two mediums at a cost that makes existing systems look almost laughable.

Until Commodore wake up to what is undoubtedly such an obvious market for the Amiga, it seems that our beloved machine will remain a stranger to the recording studio.

CD goes Midi

The Music Data Company, a division of US-based Passport, have announced the launch of a new product which will be of particular interest to Midi-based musicians.

Their MidiWorld is the first in a range of new interactive music systems which integrates traditional CD audio with Midi performance data.

Looking like a conventional CD player, the MidiWorld system will happily play conventional CDs, but its greatest asset is the fact that it will also handle the new breed of CDs which also contain Midi data.

Obviously you can't chuck in your favourite Depeche Mode album and expect to have Personal Jesus fed through your Midi system, but a wide range of MidiWorld compatible titles are being prepared as we speak. They cover a wide range of musical tastes from classical, Pop and Rock to Country and Western.

For more information, contact UK distributor MCMXCIX on 081-963 0663.

Sounds like good sense

If you're bit of a Strauss with Sound Tracker, then no doubt you'll be interested in a range of compact discs marketed by music specialist MCMXCIX (071-724 4104). Designed originally for professional musicians, they're starting to find a new audience with the availability of low cost samplers on machines like the Amiga.

Each disk contains on average over 250 sounds, each being played at various pitches to allow it to be spread across several octaves. Whether you're using a Fairlight or MasterSound, these sounds can be sampled and used – in the case of the Amiga – in just about any IFF-compatible music package including Music-X and MED.

Obviously you'll need a compact disc player to be able to gain access to the sounds, but the combination of a CD-quality sound source and a decent sampler can produce some of the cleanest sampled instruments you're likely to hear on an Amiga.

I use several of these CDs extensively. Here's a rundown of what's on offer.

EXOTIC PERC (302 Sounds) – Pitched and unpitched sounds including warped harmonics, eerie scrapes and more.

ORCHESTRAL PERC (359 Sounds) – Various cymbals, marimba, slapstick, temple block, timpani, xylophone etc.

DRUM AND BASS (618 Sounds) – A comprehensive percussion disc featuring a wide variety of drums, cymbals and basses.

ELECTRIC GUITAR (475 Sounds) – Those killer electric guitar licks including Strat, Tally and Les Paul. Jimmy Hendrix would turn in his grave!

VIOLIN SECTIONS & SOLO VIOLIN (300 Sounds) – Sustained, Sul ponticello tremolos, harmonics, chromatic runs, effects.

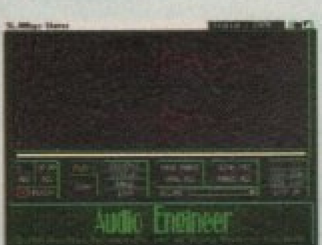
CELLO SECTION & SOLO CELLO (247 Sounds) – Sustained, marcato, glisses, harmonics, pizzacato and many more.

VIOLA & BASS SECTIONS & SOLO (225 Sounds) – Various sustained, pizzacato, harmonics, Sul Ponticello, slaps etc.

TROMBONE AND BASS TROMBONE (403 Sounds) – Various sustained, swells, mute, cup mute, fortissimo, mezzo forte, piano etc.

TRUMPET (753 Sounds) – Pop Bb trumpet, flugelhorn, cornet (isn't that an ice cream? – Ed), pop piccolo trumpet, classical Bb trumpet and classical piccolo trumpet.

FRENCH HORN AND TUBA (287 Sounds) – Various french horn sustained, swells, C tuba, F tuba, cembasso tuba and tuba FX.



Grab some decent samples with MCM's range of sound CDs

BRASS SECTIONS (348 Sounds) – Rock n' roll horns, large brass ensemble, brass quintet, large brass ensemble FX.

SYNTH STACKS (439 Sounds) – Various strings including octave, full orchestra and attack. voicerealm, fuzzy strings, bellsweep, ominous strings plus many more.

CITY SOUNDS (700 Sounds) – Subway, trains, car sirens, airports, helicopters, trucks, city people.

GRAND PIANOS (273 Sounds) – Five beautiful grand pianos including Steinway, Bosendorfer and Yamaha.

WOODWINDS-DOUBLE REEDS (356 Sounds) – Oboe, oboe d'amore, English horn, bass oboe, bassoon and contrabassoon.

STRING ORCH & FX (177 Sounds) – Sustained, pizzicato, marcato, glissando, various strings effects.

SAMPLER SAMPLER (191 Sounds) – Various sound samples and effects. If you only intend buying one disk, then this is worth checking out.

See order form on page 143



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"Is it real or is it Master Sound?"

– Amiga Computing, May 1990



Passing an exam . . . applying for a job . . . whatever you want to do in life you need to be able to SPELL!

There's mounting alarm about the appalling standards of spelling among Britain's schoolchildren. MPs, teachers, parents and employers are all stressing the vital importance of being able to spell correctly.

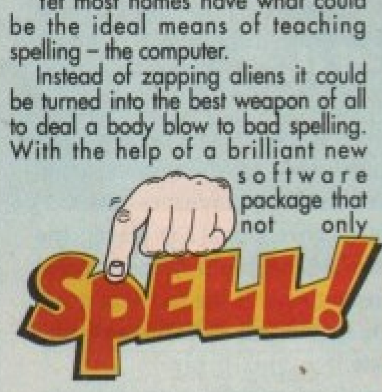
Yet most homes have what could be the ideal means of teaching spelling – the computer.

Instead of zapping aliens it could be turned into the best weapon of all to deal a body blow to bad spelling. With the help of a brilliant new software package that not only makes practising spelling painless but also loads of fun as well.

SPELL! is unique. It lets the user learn at his or her own pace. They can take as long as they like – or take on the computer in a high-speed challenge!

And this one package is ideal for everyone – with the lowest age group suitable for under-5s, while the more advanced words will stretch even the most able students.

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In a Flash: *Read the word as it flashes on the screen, then type it in. For practice runs, the word is left on the screen as it is typed.*

Rocket: *Hidden words have to be discovered in this hi-tech version of the old favourite Hangman. If they are guessed correctly the rocket will blast-off. Fail and all that's left is a load of scrap.*

Lunar Buggy: *Type fast for fun. The aim is to key in the word as it's pulled across the screen by the buggy. It has to be completed before the letters drop down a crater.*

All Mixed Up: *Jumbled letters have to be sorted out to find the scrambled word. To help beginners – and anyone else who is stuck – clues can be obtained at the press of a key.*

Conveyor Belt: *Words pass by on the screen and have to be remembered. Then they must be typed in – spelt correctly. This is a challenging test of both spelling and memory.*

All the programs have several options for extra flexibility – like a timer with on/off option to

In addition to using the 5,000 words provided, parents – or children – can create their own word lists for using with SPELL! This makes the package ideal for practising those hard-to-learn words, or for "Learn these spellings" homework.

SPELL! only costs £8.95. It is now available on disc and tape for six of the most popular home computers

The baud walk

There are hundreds of BBS services to choose from. But which ones are worth calling? Eddie McKendrick goes in search of clues

Some fads come and go constantly – skateboards, hula-hoops, hairstyles and now, it would appear, bulletin boards. A couple of years ago it was hard work fishing out a BBS to hook your modem up to. These days it's more a case of finding one which isn't constantly engaged.

Many beginners in comms make the mistake of trying one or two boards and either sticking to them or giving up the comms habit for life. This is a great shame, as one of the benefits afforded modem-owning explorers is the ability to sample as many different services as time and finances allow.

Buying a modem tends not to be an impulse decision. There is usually a specific service in mind, like Micronet, CiX or CompuServe, when the purchase is made. Often BBS services are stumbled upon by chance rather than exploration.

Many times people have contacted me here at *Amiga Computing* to ask why a board doesn't exist in their area, when in reality there are usually a few and sometimes dozens to dial into.

Quality matters

Just because a lot of boards exist doesn't automatically mean it will be easy to find services worth logging on to.

I'm not saying anything new here, in fact the last time I suggested that the quality of some boards left a lot to be desired I was greeted by baseball bat-wielding sysops up and down the country, determined to persuade me that every BBS in the land was worth its weight in phone bills.

I have decided to stick my neck out again solely because the state of British bulletin board services seems to be getting worse by the day. Time and time again I have called boards only to find an egomaniacal sysop closely guarding a pile of public domain software that I already have, or don't want.

Please don't get me wrong, I don't expect every board to have up to the minute releases ready for me to grab. But on the other hand I don't expect to download archives plagued with a virus or missing vital modules.

Nor for that matter do I expect to have a download interrupted in order to afford the sysop an opportunity to inflict his immense charm and wit upon me.

Most badly run boards are short-lived affairs, usually because people stop calling and the erstwhile sysop eventually realises there must be easier, cheaper ways to command fame and fortune, without having to tie up a telephone line and his Amiga in the process.

Only the best

A couple of issues ago I listed what I considered to be good examples of what well run bulletin boards can offer. At the high end there was Tony Millers 01 For Amiga on 071-377 1358 (8/N/1), while on a more modest but no less professional scale there was Steve Brazil's Speed BBS on 0734 475549 (8/N/1).

Two boards is hardly a definitive list. Indeed, I receive letters every month asking if we will reinstate the Almanac BBS list which stopped last year. Well the good news is *Amiga Computing* will be featuring BBS listings again, in a new, more detailed format than was previously possible.

We aim to select the very best boards available from the hundreds on offer and provide some background detail for each service we feature.

In order to get things moving, this is an open invitation for all interested sysops to send details of their boards for possible inclusion within our new-look listing. It's no good just supplying the board name and number, I want to know what sets your board apart from the hundreds of others available.

It doesn't have to be a massive board with 20 lines and five networked Amigas in order to be featured. We are more interested in the board's content than its resources. Send details to: BBS List, *Amiga Computing*, Europa House, Adlington Park, Macclesfield, SK10 4NP.

Shop your sysop!

Every board featured within the new listing will be called and verified by us before contact details are published. We won't be logging on with the name *Amiga Computing*. After all, we wouldn't want to receive any special treatment just because we are a magazine!

We are also very keen to hear what bulletin board callers rate as the best around. If you have experienced a particularly good, or bad, BBS on your travels, please do write in and let us know.

Micronet monthly

Anthony "Big Noise" Purvis starts the first of your monthly Micronet slots with a whistlestop tour of online games

One of Micronet's strong points is the vast selection of online games. These range from Starnet which is essentially a big "play by mail" game, right up to the three big interactive attractions – Shades, Trash and Casino.

At the casino

Casino is very much like the fruit machine and roulette games that are 10-a-penny. Casino, however, is 2p per minute, which brings no real benefits over and above the chance to compete against other 'netters for the highest score.

In the shade

Shades is a different matter. Imagine a huge text-only adventure game, add to this hundreds of other people playing at the same time who you can (and must) interact with to progress, and you have Shades.

Players (or Shadists as they are known) are ruthless in their pursuit of points in order that they may make their way up to wizard status, usually by flashing their sword at the odd passer-by and stealing his treasure!

To some, the game is more a way of life than light relief – it's easy to get hooked, and soon you could find yourself going to Shades "meets", finding out what everyone else looks like in person!

Digging the dirt

Trash is a similar game to Shades – you work your way up from slave to lord by collecting rubbish that is littered around the multiverse. The whole scenario is much more comical than Shades, not taking itself nearly so seriously.

Both games are good ways to meet new 'netters and have fun at the same time. If you're a fan of adventures, Shades and Trash will open up a whole new world to you. Even so, they are charged at 2p per minute, and sometimes you won't want to log off.

Be warned, Shades and Trash can seriously damage your wealth!

MICRONET

Next month

More Micronet monthly and how to become a sysop.

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614 Budbrain 2: Excellent!
654 Evil dead demo: Kill em!
674/5 Laurel & Hardy (2 disks)
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Teddy bears' picnic

Peter Hickman ducking and diving on hooks and bobs, sprites and icons

Have you ever wondered about the Amos functions Sprite Base and Icon Base? They provide little hooks into Amos which allow you to find out more information about the bobs and icons you may have stored in memory. In this month's Amos column we explore these hooks, write some procedures to exploit them, and finally come up with a routine to allow pasting of bobs according to their hotspots.

Although Amos gives the illusion that bobs and icons are stored in a bank, they are spread about in memory to make maximum use of the space available. The Sprite Base/Icon Base functions return the memory address of the image you specify. For instance, if you type TEMP=SPRITE BASE(1), the address of BOB number one will be placed in the variable TEMP.

OK, let's try that with a real set of sprites. Check out the coverdisk and you will find a bank called "TEDDY_BOB.ABK". Load this bank into memory by pressing Escape to go to Direct mode and type

```
Load "TEDDY_BOB.ABK"
```

Just so we have a nice clean screen to work on, type in

```
Flash Off
Curs Off
Cls 0
Get Sprite Palette
Paste bob 50,50,1
```



You should now have a picture of a teddy bear sitting on your screen! Ideally, it would be nice to find out a little more about the image which is sitting on the screen and it is through the Sprite Base function that we can achieve this.

The area of memory where the sprite image is stored also contains information on the width, height, number of bitplanes, X hotspot and the Y hotspot. To start by looking at the width of the teddy, jump back into the editor and type:

```
XSIZE[1]
WIDTH=Param
Print WIDTH
End @l = '
Procedure XSIZE[SPNUM]
   TEMP=Sprite Base(SPNUM)
   XSIZE=Deek(TEMP)*16
End Proc[XSIZE]
```

If you run this program the number 48 should pop up on the screen. If it is not then start worrying! The procedure XSIZE[] finds out where in memory a sprite is stored and then looks at what value is stored in this memory location.

Things get a bit more complicated now. You will see that whatever value is found in this memory location is then multiplied by 16. This is the way Francois Lionet designed Amos and is nothing to worry about.

When you grab a bob or sprite Amos will always round the width up to the nearest multiple of 16, then store this number divided by 16. Fortunately this is only done with the width so we don't have to worry about it for anything else.

To the find out the height of an image, located two bytes or one word further up in memory, add the following lines to the bits you have already typed, remembering to put the first three lines above the End command which we used in the part of the program.

```
YSIZE[1]
HEIGHT=Param
? HEIGHT
'
Procedure YSIZE[SPNUM]
   TEMP=Sprite Base(SPNUM)
   YSIZE=Deek(TEMP+2)
End Proc[YSIZE]
```

The Amiga uses a series of bitplanes to store and display its images and Amos keeps to that standard even down to the sprites. A single bitplane is used for displaying a two-colour screen, two bitplanes are used for a four-colour screen, three bitplanes for an eight-colour screen and so on.

A simple way to change the number of bitplanes into the amount of colours an image takes up is to use the formula COLOURS=2^BITPLANES. Type in the next bit of code, and remember to place the first three lines before the End command.

```
BPLANES[1]
PLANES=Param
? 2^PLANES
'
Procedure BPLANES[SPNUM]
   TEMP=Sprite Base(SPNUM)
   NUM=Deek(TEMP+4)
End Proc[NUM]
```



Now we will do something useful with the next two procedures – which return the X hotspot and Y hotspot. Note that although the hotspots are used in Amos when the Sprite or Bob commands are activated, they do not function when using the Paste Bob command.

```
Flash Off
Curs Off
Cls 0
Get Sprite Palette
Hot Spot 1,$11
STICK_BOB[0,0,1]
'
Procedure STICK_BOB[X,Y,NUM]
   XHOT[NUM]
   XHOT=Param
   YHOT[NUM]
   YHOT=Param
   Paste Bob X-XHOT,Y-YHOT,NUM
End Proc
'
Procedure XHOT[SPNUM]
   TEMP=Sprite Base(SPNUM)
   HOT=Deek(TEMP+6)
End Proc[HOT]
'
Procedure YHOT[SPNUM]
   TEMP=Sprite Base(SPNUM)
   HOT=Deek(TEMP+8)
End Proc[HOT]
```



Things become even more complicated when using negative hotspots, mainly because Amos does strange things to store them. As a result this Bob sticker can only be used for images with positive hotspots. I'll give you a general purpose routine which can cope with any hotspot next time.

Everything I have said so far can be used for icons as well. Check these out :

```
Load "TEDDY_ICON.ABK"
Flash Off
Curs Off
Cls 0
Get Icon Palette
Paste Icon 50,50,1

Procedure XSIZE[SPNUM]
   TEMP=Icon Base(SPNUM)
   XSIZE=Deek(TEMP)*16
End Proc[XSIZE]
'
Procedure YSIZE[SPNUM]
   TEMP=Icon Base(SPNUM)
   YSIZE=Deek(TEMP+2)
End Proc[YSIZE]
'
Procedure BPLANES[SPNUM]
   TEMP=Icon Base(SPNUM)
   NUM=Deek(TEMP+4)
End Proc[NUM]
'
Procedure XHOT[SPNUM]
   TEMP=Icon Base(SPNUM)
   HOT=Deek(TEMP+6)
End Proc[HOT]
'
Procedure YHOT[SPNUM]
   TEMP=Icon Base(SPNUM)
   HOT=Deek(TEMP+8)
End Proc[HOT]
```



One strange thing about icons is that although they don't use the hotspots, the gaps in memory are still there. This was to retain compatibility with the sprite banks. This means that four bytes are wasted for every icon you have in memory. Perhaps you could come up with something useful to store in these empty slots?

That's all the programming for this month. The compiler should be in the shops pretty soon now and I'm sure you will be impressed by the speed increases it delivers.

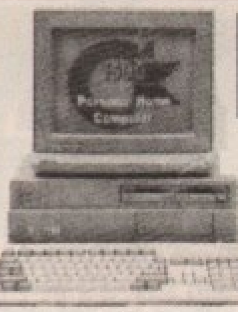
Ctext extension

Another new extension is being developed for Amos. Called Ctext, it allows you to produce proportional or non-proportional font displays by using a quirk of the Amos system.

All the characters are stored as icons but not in bank number two, which means that you can have two icon banks in memory and your fonts can be any size or amount of colours. This means no more waiting around for those horrible Workbench things.

Oh well, I've nothing else to say except that if William Cochrane is reading this – phone me! Willie wrote Electricity on FS3 5-7s, and it's giving me a few headaches converting it to the CDTV version. Unfortunately he has moved and trying to track him down is proving pretty difficult. So call me Willie or I'll leave your name off the CDTV 5-7s credits!

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Links and connections

Margaret Stanger plays tricks with IFFs

Program source modules are solitary by nature and like to keep themselves to themselves. But a C module communicates with others of its kind, and even acknowledges an assembler source module. The software on the support disk contains no fewer than four linked modules, as well as examples of key processing and the Execute command from the Dos library. But first, a brief look at Sozobon C.

Inspired by a letter to *Amiga Computing*, I persuaded Stevie Kennedy to send me a copy of the PD C compiler to try. I felt that if there were any readers using Sozobon, I ought to make my source code compatible. I find that if I remember to do any casting properly, and do not write the first array address as &mybuf when I really mean &mybuf[0] my code will compile with Sozobon.

I was very impressed with the package. Someone has gone to a great deal of time and trouble with this piece of public domain software. The code compiles to 68000 source code which it stores in ram. All modules are then assembled with the A68K assembler and linked using the public domain linker Blink.

Documentation on the disk includes adequate instructions on un-archiving and using the compiler and assembler. Include files are not included, but there is an explanation of how to use them and where they can be obtained.

The assembler version of a C source file could be very useful to someone translating from C to assembler, or wanting to optimise some of the code. I also found it useful to have the C library routines available for assembler modules.

In the archives

This month's software needs an IFF file reader, so I have included the source module iffread.c which reads and decompresses a picture file.

```
readfile(name,bitmap,viewport,code)
```

This reads an ILBM or ACBM file where *name* is the address of the filename, and *bitmap* is the address of the bitmap structure to be used assuming this bitmap is initialised and the rasters correctly allocated, *viewport* is a pointer to the viewport, and *code* is a colour change flag.

The module assumes that the file is present, and is ILBM or ACBM and that the bitmap and viewport are OK. In this case, the picture is read into a buffer, copied to the screen, the colours changed to those of the IFF file, and then the screen is moved into place.

```
readfile("Loadpic",&PicBitMap,WVP,0);
BltBitMap(&PicBitMap,0,0,&ScreenBitMap,
0,0,320,256,0xc0,0xff,0);
FreeBitMap(&PicBitMap);
MoveScreen(CustScr,0,-270);
```

There is no need to declare a void external function readfile() as an external reference.

The gadget module, imaginatively named gads.c, contains the data for the four screen gadgets – courtesy of Power Windows. The window's first gadget is declared as an external reference in lynx.c so that it can be used by lynx.c. The main file lynx.c contains:

```
extern struct Gadget lGadget1;
 /*pointer to first gadget in gads.c file*/
```

where gads.c has *lGadget1* defined as a structure in the normal way. The gads.c file also contains the gadget handling routine:

```
void HandleEvent(object)
APTR object;
{
 if (object == (APTR)&lGadget3)
 { program2();return;}
 if (object == (APTR)&lGadget2)
 { fade();return;}
 if (object == (APTR)&lGadget1)
 { program1();return;}
 if (object == (APTR)&lGadget4)
 { quit();return;}
}
```

Assembler joys

It is possible to call an assembler function from a C module by declaring the assembler function address as an external reference. Values are returned via register d0, so all the joystick values from the joystick reading routine are put in d0, where the C compiler would expect to find them. The assembler source module Stix2.a declares:

```
XDEF _playsig
```

for use in other modules. The C source module lynx.c declares:

```
extern long playsig();
 /*for the value returned from  stix2.a*/
```

and uses it in the program as:

```
joyvalue = playsig();
```

The joystick routine uses the data registers. It is advisable if using any address registers other than a0 and a1 to push the registers on to the stack at the beginning of the routine, and pull them off at the end, paying particular attention to a4.

The link

The assembling and compiling of this month's code is straightforward:

```
asm stix2
lc lynx gads iffread
```

and linked using part7.lnk:

```
FROM LIB:c.o+"lynx.o"+"gads.o"
+"iffread.o"+"stix2.o"
TO "lynx"
LIB LIB:lc.lib LIB:amiga.lib
BATCH
```

The software

The support disk contains a program – lynx – that will read in a picture file, loadpic. The four screen gadgets are View, which runs the May Code Clinic program, Fade, which fades the colours in and out, Window, which runs the March Code Clinic program, and Exit for when you get bored.

Keys 1, 2, 3, and Esc have the same function



Load screen

as the gadgets. When only a few keys are involved, a simplified key handling routine can be used. The code from the IntuiMessage gives the internal key code of the key pressed:

```
/*Handle keys for load screen*/
void HandleKey()
{
 code=code&255;            /*internal key code*/
 if (code==0x01) {program1();code=0;return;}
 if (code==0x03) {program2();code=0;return;}
 if (code==0x02) {fade();return;}
 if (code==0x45) {quit();code=0;return;}
}
```

A program can be run from inside another program using the Execute command from the Dos library. In this case, the program name is all that is needed. There is no input or output file handle.

```
void program1()
{
 Execute("viewports");
}
```

This will read in and execute the Viewports program from the May 1991 edition of Code Clinic. After execution all the memory will be released, including that of the Viewports program code.

When there are no messages form the window port the joystick is read, returning a value with the appropriate left, right, up, down, and fire flags.

```
joyvalue = playsig();
if (joyvalue !=0 )
{
if ((joyvalue & 1)==1) Write(filehandle,"r",1);
if ((joyvalue & 2)==2) Write(filehandle,"l",1);
if ((joyvalue & 4)==4) Write(filehandle,"u",1);
if ((joyvalue & 8)==8) Write(filehandle,"d",1);
if ((joyvalue & 16)==16) Write(filehandle,"f",1);
```

The results are written to the Dos screen using the initial output filehandle. The only value of this data is to show that the joystick routine is working and returning a value.

Disk goodies

Also on the disk is the fully documented source of the main program (lynx.a), the joystick reader (stix2.a), the gadget data (gads.c) and the IFF picture reader (iffread.c). Any code quoted on this page is not stand alone, so I would advise using the support disk rather than typing in anything from this page.

I have also included the make and link files – although they may need altering for other compilers – the object files, the picture data, and finally two executable programs.

COMING SOON... fonts and the diskfont library.

Picture this...

Barnaby Page with a thousand words or so on the worth of pictures

These days, when the best wordprocessors support many different fonts and sizes, multi-column layout and the like, it is the ability to incorporate pictures into a document that really sets DTP apart. And over the last two years the growth in popularity of hand-held scanners – along with price cuts in desktop scanners – has allowed many DTP designers to use "real-world" images such as photographs, signatures and company logos, as well as computer-generated art.

But the use of pictures, like the choice of type, can break a publication as well as make it. In particular, too many designers use a picture because it looks good on its own, without considering the way it fits into the page and the publication.

After all, unless you're producing an art journal or what is euphemistically described as "men's interest" magazines, people pick up your publication to read the words. The pictures serve two functions: they can help bring the words to life, and they give each page an individuality that pure text often lacks.

The bigger the better

But pictures are emphatically not merely decorations. Carefully-chosen images are apparently worth a thousand words, and you should give them almost as much space. If your eventual output will be on anything less than a laser printer, or if it is likely to be photocopied, small pictures will lose impact along with detail. The shapes of a large image, however, are recognisable even from a dot matrix printer.

Nevertheless, moderation in all things is the thing to remember. A picture which is *too* big cannot be taken in at a single glance and its sense may be lost – just as an overlong sentence is difficult to follow.

As a rule of thumb, a picture should not be larger than the field of vision at about a foot away from the eyes. To maintain the cohesiveness of a page, make sure that pictures fit in with the grid you're using for type.

Huge pictures can also unbalance a page. If a publication is predominantly text and small images, the sudden appearance of a picture almost filling the page will unnerve the reader who may then ignore the text beneath, unconsciously assuming that it's a full-page picture. Of course, this doesn't apply on title pages and the like, where text will normally be brief and set large.

The bigger a picture gets, the tighter you should crop it for an exciting effect. Show only the interesting area of the image, and eliminate backgrounds.

This is especially true with photographs of people. For instance, take a picture of an angry politician in a room full of tedious grey-suited types. Printing the whole image means giving over a large part of your page to distracting irrelevancies, but crop right up to the politician on all sides and he'll jump out of the page. This is now done very well in the national quality papers, following the lead of *The Independent*.

If the photograph, scan and output device are really of high quality, you can crop right into the person's face, stopping just below the chin and above the hairline. And ears are there to be cut off, as Vincent said.

All this is assuming that your images are scanned photographs. But for many publications, computer-generated art or diagrams are more appropriate – and without access to a scanner, they're all you can use anyway.

The advantage of computer-generated pictures, whether they're clip art or your own creations, is that when properly done they take advantage of a printer's output resolution. Photographic prints are continuous-tone images, and the smooth greys of the original cannot be reproduced perfectly by any printer, however high its resolution: printers don't have grey ink, after all.

Instead, when they're scanned they go through a process of "halftoning", in which the original greys are approximated by altering the concentration, and sometimes the size, of black dots. You can see this effect by examining a laser-printed photo under a magnifying glass.

How good the halftoning is depends on the scanner and the scanning software, but by definition it is never perfect. Computer-generated art, by contrast, is usually drawn with a laser printer or 24-pin dot matrix in mind, and the artist can avoid effects which won't print satisfactorily.

Remember here that what looks good on the screen won't necessarily work on paper. Popular Amiga techniques such as ray-tracing, as shown in *Amiga Computing's* Gallery section, can be stunning in screenshots but often use too many subtle gradations to work well on a low-resolution output device.

The right line

When creating art for publication, it's often better to rely on line drawing – printers can cope with straight lines better than anything else. Work in black and white unless you have access to a colour printer: some colours appear stronger than others onscreen (red appears bolder than yellow, for instance), which can cloud your judgement of the eventual mono result.

And then of course there's clip art – free, public domain, or strictly commercial, much of it advertised in this magazine. The best bet when obtaining clip art is to go for one of the specialist collections – computers, motorbikes, fish, whatever's relevant to you.

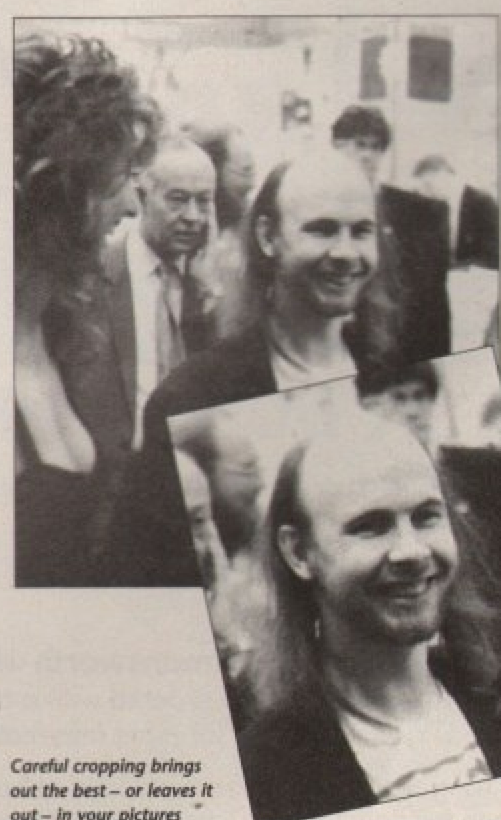
The more general disks tend to include too many useless pictures of hearts, birthday cakes and the like, which many a desktop publisher has been forced to use out of desperation. Avoid that trap – pictures are as much a part of your document as the words, and deserve the same attention.

Copyright caveat

Everyone knows that words belong to their author, although as is usually the case with m'learned friends, the details are a bit more complex than that. More confusion surrounds the copyright over pictures, but the important thing to remember is that it does exist.

You must not reproduce a picture from the local paper or a book without the copyright-holder's permission – usually this will be the publisher. However, if your publication is non-commercial, a phone call and a promise to acknowledge the source is usually all that's required for permission. Newspapers are happy to provide prints (at a cost) if you want to scan them.

On a brighter legal note, the invasion-of-privacy laws in Britain are much less restrictive than most people believe. You are perfectly free to publish photographs of people without their permission, provided the context isn't libellous.



Careful cropping brings out the best – or leaves it out – in your pictures

Barnaby Page is editor of PrePress magazine and a DTP consultant. He can be reached on CIX as 'prepress'.

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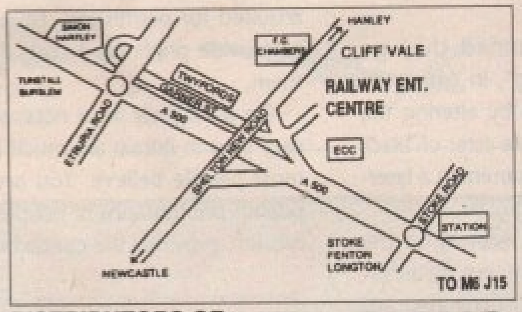
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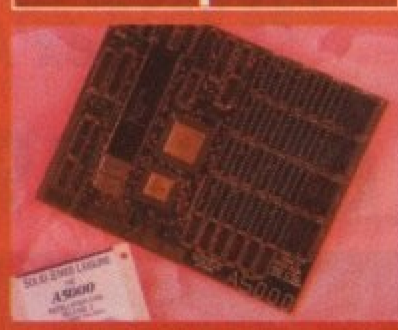
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Send this completed coupon to: GRAND GRAB CLAIMS, *Amiga Computing*, Europa House, Adlington Park, Macclesfield, SK10 4NP.
All entries must be received before Thursday August 12, 1991.

1. *Amiga Computing* GRAND GRAB is open to all readers with the exception of *Europress Group* employees, agents and advertisers. 2. Each claimant MUST complete the skill question on the GRAND GRAB claim form before their entry becomes valid. 3. The main GRAND GRAB prizes will be awarded to the first three claimants drawn from assembled entries on Thursday August 8, 1991. 4. All remaining claimants will receive unspecified runner-up prizes 5. *Amiga Computing* reserve the right to substitute prizes without notice. 6. The editor's decision is final and no personal correspondence can be entered into as a result of a GRAND GRAB claim. 7. All successful claimants will be listed in future issues of *Amiga Computing*.

Next month's GRAND GRAB

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The first 10 GRAND GRAB winners to have their completed claim forms drawn on the closing date will win a copy of Wordworth from Digita, worth £129.95

All remaining winners will receive other valuable prizes from *Amiga Computing*.

Public concern

PRIZE LETTER

As a relative newcomer to the world of computing, I have become interested in public domain software. To obtain programs for about a twentieth of the price of commercial ones seems a very good deal, but I wondered wether it was too good to be true, and hence I initially regarded PD with scepticism.

I now know a little more about reasons why programmers might not want to make a profit on their work, but I still have misgivings that this kind of software might be prone to computer viruses.

This leads me on to my main query. There doesn't seem to be a definitive work on viruses, so what little I know about this subject has been pieced together from articles in magazines.

As I understand it, they are programs lurking on a disk inserted by practical jokers as an act of sabotage, and they can do anything from broadcasting silly messages to wiping the main program on the disk clean.

They can also corrupt any disks subsequently used, but you should be OK if you switch off the computer after using the disk containing the virus (shouldn't you?), and the virus cannot harm the computer's operating software (can it?).

So much for that, but I'm still a little unclear about how viruses get there in the first place. I suspect that when one Amiga user swaps his programs with another and this turns into a chain, then sooner or later some unsuspecting person will be landed with a virus.

As far as I know you can't pick up viruses from commercial software or blank disks purchased from a reputable supplier (can you?). At any rate, I don't know any other Amiga users, and I've never had any trouble with viruses.

So why do I think that PD software might be prone to viruses? Let us suppose that some nasty person submits a virus-infected disk to a PD supplier under the guise of donating his program to the nation out of the goodness of his heart.

No matter how reputable the PD supplier is, will he be able to know what has happened? Put another way, can a PD supplier guarantee that his software is virus-free?

It could be that I'm worrying unnecessarily and PD software isn't any more prone to viruses than any other kind. However, before I invest my life's savings in PD software, your advice would be appreciated.

Howard Pizzey, Staplehurst, Kent.

What you say about viruses is correct for the most part. The best way to define a modern day virus is as a piece of hidden code which transfers itself into ram and then on to any further disks you insert.

A virus can, as you suggest, be trivial or traumatic. Powering down your Amiga should clear any virus from your system, simply because ram is volatile and is cleared when the computer is totally reset.

There is nowhere for a virus to hide long term inside an Amiga. The obvious risk comes from any floppy disks that have been infected by the virus while it was in ram.

There is a whole range of virus checkers available. These simply sit in ram and scan every disk inserted into your drive for each of the currently known viruses. When a virus is found it can be examined or deleted.

Most reputable PD libraries put all of their disks through a virus checker as part of the duplication process. You shouldn't rely on them doing the safety checks for you though. Every Amiga owner should have a virus checker. It is you that has to live with the consequences of any infected disks that slip through. All good sources of PD can supply you with the latest in virus killers.

It makes very good sense to keep abreast of the situation and update the virus killer you employ every time a new version is released.



Back issue blues

Regarding the Klondike game on issue 34's coverdisk, please could you let me know where if possible I can obtain further card games and how I go about obtaining another copy of issue 34's coverdisk, as mine has been kidnapped by another Amiga user.

J Belcher, Swinton

There are loads of captivating card games available in the public domain. Check out the PD section of this issue for some contact details.

Back issues, including coverdisks, are available for a limited period from our subscriptions department, Europress Direct.

See the reader order form on page 161 for their address and telephone number.

Ezra online

Ezra Surf can be contacted on a whole host of bulletin boards and conferencing systems. If you have anything to say, get it off your chest online!

Amiga Computing now also has its own Fidonet echo which is being carried by BBS systems up and down the country. Any Fido sysops interested in hooking up should contact 01 for Amiga to receive this echo.

Additionally our mail man with the most, Ezra Surf, hangs out on the following services:

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PD price plummet

Regarding your June 1991 issue, in your rather nice article about the world of public domain you stated that Amiga public domain was available for 50p up to £5.

Well I am happy to tell you that I am running a PD company which sells public domain for 40p. The price includes a copy of the requested software, label stating the software on the disk and return postage. All the customer has to send is 40p and the disks.

My library consists of over 200 disks and is growing every day. To join all the person has to do is send a disk and a stamped self-addressed envelope.

I will in return send them a copy of my latest catalogue disk which has a list of all my PD, a few demos, some utilities, a PD game and a classifieds section. They will also receive an order form. Orders are always put back into the post within three days.

I am not offering the best service, what I am offering is value for money. "But what has it got to do with me?", I hear you ask. Well, with prices as low as that I just cannot afford to advertise in the more famous magazines, I have to put up with adverts in ➤

But is it art?

While browsing through my elderly computer magazines I suddenly had a brilliant idea.

Many of the game advertisements which I see feature superb artwork of the highest quality, and it seems such a shame that much of it is now long forgotten.

This is where the computer companies come in. They could produce an annual calendar and poster book containing all their best pieces of artwork as nominated by the general public and various computer magazines.

These books and calendars could then be sold for a couple of pounds each and I'm sure that everybody with an interest in art would buy them.

The artists who draw these illustrations must spend hours on them – compiling calendars and poster books would widen the audience of appreciative viewers and form the definitive collection of computer drawings from only the very best artists.

What do you think of this idea?

S N Hardy, Wales, Sheffield

Many software houses give posters away with games these days. The idea of an annual or calendar seems a good one, but you will probably find that only people interested in computer games would actually appreciate the very distinctive style of art used on most software packaging.

Our sister weekly games magazine *Games-X* provides computer art posters every week.

One last thing, just how many different colours of pen do you have?

free ad columns. People just don't take any notice though because they think that there's a catch and that they are going to lose their disks, but it is not true!

There are many fly-by-night libraries which go bust and punters never see their money again. Burman's PD has been running now for a year and I have only received one complaint which I instantly solved.

Richard Burman, 41 Pinner Park Gardens, Harrow, Middlesex, HA2 6LQ

We have a regular PD column every month in *Amiga Computing* which provides a platform for PD libraries, large and small. Why not send in your catalogue disk with some of your latest releases?

Commodore con?

Why do Commodore make such wonderful computers but such pathetic peripherals?

Take for example the A1010 drive. This was originally sold for £150, and was eventually considered to be a bargain offer when reduced to £100.

Why, oh why, would anyone wish to pay £100 for a chunky big box identical to the internal drive when they can buy a sophisticated model for £40 less?

Perhaps their selling strategy is to make the innocent consumer believe that because the price is so high it will be of very high quality.

If this is the case, then I fell into their trap when I purchased the A501 ram expansion for a staggering £85, rather than buying one of those £30 efforts.

Another fine example of this is the Commodore mouse, which will be quickly replaced by any serious user if it is not broken first.

Obviously Commodore have the technology to develop better peripherals, so if they had any sense they would start concentrating on more competitive prices to avoid them losing money to the other firms.

Brian Greenhill, Whitecraigs, Glasgow

Commodore disk drives have been notorious right from the days of the 1570 external drive for the C64. I agree with you that Commodore peripherals tend to be on the hefty side both in terms of design and price.

Why do people buy them? Well you can answer that question yourself with your purchase of the A501. People instinctively trust a brand name.

I have to confess that *Amiga Computing* is far from impressed with the quality of Commodore bolt-ons, having waited two months for a monitor for our Amiga 3000, only to find it was faulty before we got it out of the box.

Workstation wait

I saw an advert for the *Amiga Computing WorkStation* disk in your magazine last month. It sounded like a really good idea, so I sent off my £3.50 and waited eagerly for two weeks for it to arrive.

You can imagine my horror when nothing came and my cheque hadn't been cashed.

After phoning Europress Direct I found out that there had been a big demand for The WorkStation and you were sending out the disks as fast as you could. Luckily my own copy of your excellent WorkStation arrived just two days later, complete with a very nice manual.

Would it not be better to make sure you have lots and lots of spare copies of something as impressive as The WorkStation before you advertise it? Having said all that, it was worth the wait!

A. Parker, Cork, Ireland

You would not believe the number of orders we received for The WorkStation within a week of the first advert hitting the streets.

Our order processing and dispatch people did duplicate loads of disks ready for the orders to flow in, but we obviously didn't reel off enough of them. It just goes to show that a good idea can go a long way.

I'm glad you think it was worth the little wait. As an aside, we now have enough WorkStation disks to undertake major land fill and reclamation projects, so order with confidence.

Shareware scam

After reading your excellent feature on viruses in the March edition of *Amiga Computing* I sent off 10 dollars to obtain the program VScan 4.98c from Arthur Hagen Johan of Norway.

After waiting over a month and receiving nothing I posted a second letter and I have had no reply. I wonder if any more readers have had the same problem with this man. Do all shareware – or whatever you call them – authors treat you this way?

J Gower, Putney, London

Considering most users of shareware programs make no donation whatsoever it is sad to hear that an author is treating you in this way.

All I can say to reassure other readers is that I personally have made shareware donations in the past and received very polite, prompt service from authors with better manners than Mr Johan would appear to possess. If you read this Mr Johan and there has been some misunderstanding, please get in touch with Mr Gower. I will keep everyone in touch with any progress through these pages.

By Jupiter

Would you think I was being cheeky if I asked you whether our not your headquarters are located on the same industrial park as those of AMOS fame?

If so, would you mind popping over there and asking them (very politely) where they've hidden the files associated with June's AMOS column?

I can't find them, and I am now a very frustrated beginner who, tomorrow shall buy another copy of your magazine in a desperate quest for AMOS satisfaction.

Stephen Mackenzie, Woodsmoor Park, Stockport

It's a fair cop! Our AMOS main man Peter Hickman supplied the code too late to be included on the coverdisk you mention. All was put to rights the month after though.

***Amiga Computing* is located in the idyllic Adlington Park in a building called Europa House. Mandarin Software on the other hand are located across the road in Triton House. Why our respective buildings are named after Jupiter's moons is one of the many unsolved mysteries of our time.**

Short circuit

I have just read the feature in the June edition of *Amiga Computing* by Paul T. Whiteley about what to do if your Amiga's heart stops beating. At first I could not believe that the article was meant to be serious and then, horror of horrors, I realised that it was.

I have been in the electrical and electronic trades since I started work, nearly 40 years now, and a short circuit, whether you prefix it with LIVE or DEAD has always meant one thing – somewhere in the circuit two or more conductors, be they wires, tracks, components leads or any combination of these, have made contact with each other at a place where they shouldn't, allowing a current, normally a high one, to flow.

What Mr Whiteley describes as a dead short circuit is what is usually known as an open circuit, which seems only logical when you come to think of it. If the circuit is broken it must be open.

What I find so disturbing about an article such as this is that it may encourage some Amiga user who is a complete novice at electronics to have a go at repairs that are well beyond his capabilities – and a £300 computer is not the place to experiment

P J Richards, Kent

I agree totally that people who don't know what they are doing shouldn't meddle inside their machines. Paul was at pains to emphasise that if anyone is unsure, an expert should be consulted.

To quote the article *"A live short that you don't know about could kill you...Get a professional"*



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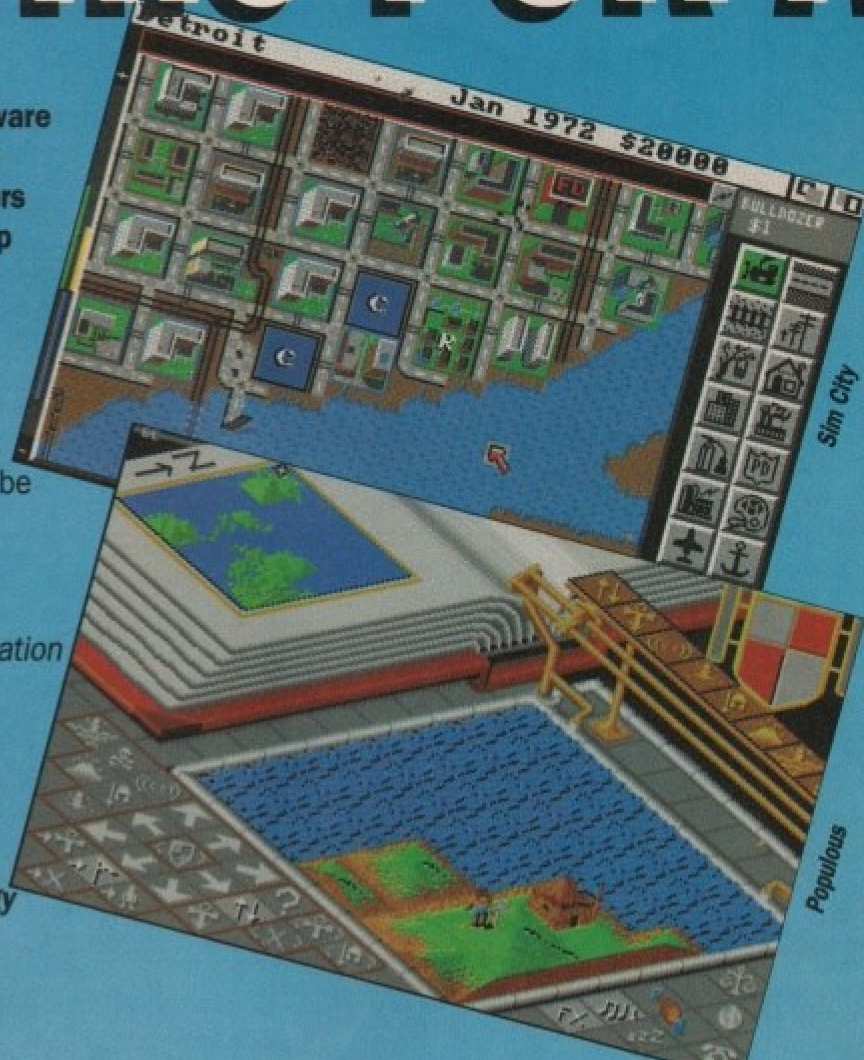
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ROCK LOBSTER

The Amiga Computing team chill out...

Horror story

We just can't stand any more virtual reality puns, so it is with a certain degree of relief that we are closing *Caught in the act! 37* .

Entries came in thick and fast, though mainly thick it has to be conceded. After much sifting, coffee drinking, and very little delibera-tion, if the truth be told, the *Amiga Computing* team have gone for the witty barb below submitted by **Colin Sanders from Denton**.

A copy of **Elvira** the game is in the post as you read this, adding a whole new dimension to the term "booby" prize.



Just what I've always wanted... A blow-up Nick Veitch



Who's glory?

In a sudden, unexpected deviation from *Caught in the act!* tradition, competition number 39 is totally devoid of any *Amiga Computing* staff.

Instead we have a snapshot of some-handsome footballing fella, plucked from the family album while he was out recording his next hit single. If you have any witty words that set this slice of photographic history off a treat, do send them in.

All entries to: **Caught in the act! 39, *Amiga Computing*, Europa House, Adlington Park, Macclesfield, SK10 4NP.**

Lemmings!

We can at last announce the lucky win-ners in our great Lemmings giveaway. You are probably expecting this article to lunge into all the tried and tested compo-gibber, you know the sort of thing; "we had an overwhelming response" and the like.

The fact is, being hardened Lemmings fans here in the *AC* office, we did expect a big response. What we got though was a huge response.

All we wanted was a name and address, nothing more. That didn't stop some entrants spinning us an elaborate web of emotional blackmail.

Take, for example, this disgusting threat from **Antony Brewer from Newbury Berks**. I think you will agree he is a truly sad character. We could hardly ignore this Lemming death threat and as a result our man Anthony is one of the many winners.

Many thanks to everyone who entered, it's just a pity we don't have enough Lemmings gear to give every-one some goodies.



The other lucky winners are: **V Simmons (Middlesex), E Manning (Southend-on-sea), A K Woolgar (Sussex), M Burbridge (Kent), H Moore, (Sheffield), B Kitt, (Cornwall), D Litherland (Bolton), R Walker (Dudley), D Griffith (Cheltenham), Peter Mitchmen (Boston), Ben Hampshire (Kent), J Oliver (Cleveland), T Arnesen (Norway).**

Bunder banter

We have also closed the mail sacks for *Caught in the act! 38*. In a sudden bout of compas-sion, we have decided to let Leslie choose the best caption himself.

Apparently he has lots of prize ideas for the eventual winner of *CITA 38*. Front runner at the moment appears to be a blow torch with flame-thrower attachment.

Who knows, Leslie may even deliver the prize to the lucky winner...

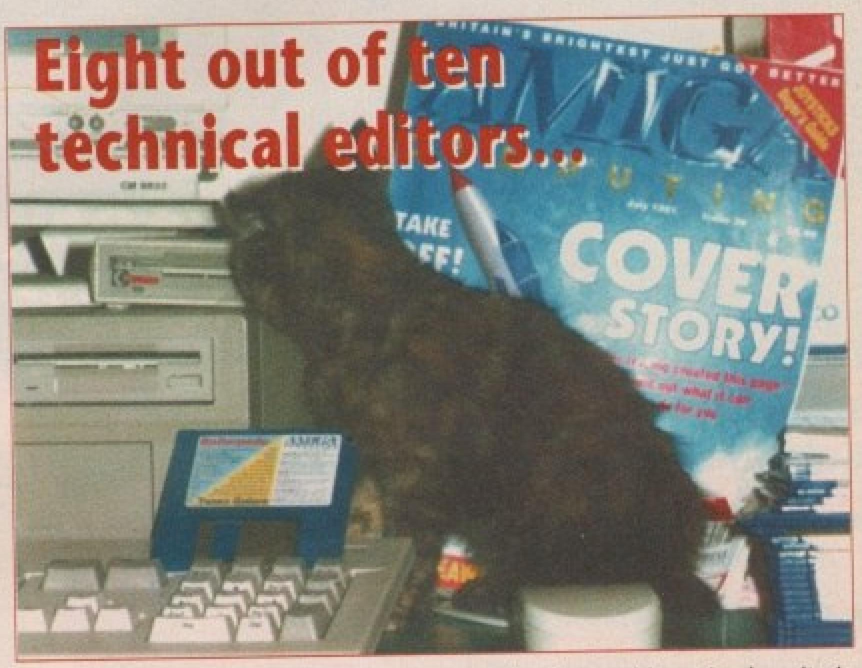
Cover story

Just a quick thank you to Henri Bujko for producing last month's *Amiga Computing* cover. The stunning ray-traced jet and shiny *AC* logo was produced by Mr Alternative Image himself, using a whole range of advanced 24-bit techniques.

To find out what ray trac-ing can do for you, just give those really nice Alternative Image people a call on 0533 440041.



Eight out of ten technical editors...



Yes, we know, it's a silly picture. Even more silly than the infamous snapshot of a cat clawing at an Amiga mouse which *Amiga Computing* was so fond of using in its formative years.

As well as being an opportunity to publish another silly photo, it's a chance for us to clear more room in the *AC* cup-board by having another Rock Lobster Compo.

To win a prize that will leave you completely speechless, simply write in and tell us which member of the *AC* team this moggie belongs to and what it is called.

So you're not left totally clueless, this feline could come from Devon and it loves custard.

Send your entries to: Stevie's Cat, Rock Lobster, *Amiga Computing*, Europa House, Adlington Park, Macclesfield, SK10 4NP.

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Amiga Computing: The best Amiga digitiser has had the technicolour treatment. Vidi must be one of the most exciting peripherals you can buy for your Amiga.

Micro Mart: When I first saw Vidi "in the flesh" as it were, at the CES show last September it looked to be the answer to a frustrated Digi View owner's dreams – in fact to see pictures appearing on screen without the customary two minutes wait seemed almost too good to be true. I have consistently produced more good quality pictures in the short time I have had Vidi than I ever did with Digiview.

Zero: Now under normal circumstances cheap usually means poor quality but this is not the case with Rombo. Why? cos Vidi-Amiga is the best digitiser for under £500 and I've tried them all.

Amiga Format: Where quality is concerned, Vidi produces some of the best results I've seen on any digitiser at any price.

Amiga User International: The latest addition to the Rombokit is called Vidi-RGB and brings this already impressive package to the realms of totally amazing. CONCLUSION: Who will find Vidi-Amiga useful? The answer to this is almost anyone with a video recorder or camera and a passing interest in graphics.

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You will see from independant review comments that we are undoubtedly their first choice and that was before the complete solution was launched. If you have just purchased your Amiga and are not sure what to buy next, then just read the comments or send for full review and demo disk.



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don't expect to download archives plagued with a virus or missing vital modules.

Nor for that matter do I expect to have a download interrupted in order to afford the sysop an opportunity to inflict his immense charm and wit upon me.

Most badly run boards are short-lived affairs,

Quality matters

Just because a lot of boards exist doesn't automatically mean it will be easy to find services worth logging on to.

I'm not saying anything new here, in fact the

receive letters every month asking if we will reinstate the Almanac BBS list which stopped last year. Well the good news is *Amiga Computing* will be featuring BBS listings again, in a new, more detailed format than was previously possible.

We aim to select the very best boards available from the hundreds on offer and provide some background detail for each service we feature.

In order to get things moving, this is an open invitation for all interested sysops to send details of their boards for possible inclusion within our new-look listing. It's no good just supplying the board name and number, I want to know what sets your board apart from the hundreds of others available.

It doesn't have to be a massive board with 20 lines and five networked Amigas in order to be featured. We are more interested in the board's content than its resources. Send details to: BBS List, *Amiga Computing*, Europa House, Adlington Park, Macclesfield, SK10 4NP.

Shop your sysop!

Every board featured within the new listing will be called and verified by us before contact details are published. We won't be logging on with the name *Amiga Computing*. After all, we wouldn't want to receive any special treatment just because we are a magazine!

We are also very keen to hear what bulletin board callers rate as the best around. If you have experienced a particularly good, or bad, BBS on your travels, please do write in and let us know.

Micronet monthly

Anthony "Big Noise" Purvis starts the first of your monthly Micronet slots with a whistlestop tour of online games

One of Micronet's strong points is the vast selection of online games. These range from Starnet which is essentially a big "play by mail" game, right up to the three big interactive attractions – Shades, Trash and Casino.

At the casino

Casino is very much like the fruit machine and roulette games that are 10-a-penny. Casino, however, is 2p per minute, which brings no real benefits over and above the chance to compete against other 'netters for the highest score.

In the shade

Shades is a different matter. Imagine a huge text-only adventure game, add to this hundreds of other people playing at the same time who you can (and must) interact with to progress, and you have Shades.

Players (or Shadists as they are known) are ruthless in their pursuit of points in order that they may make their way up to wizard status, usually by flashing their sword at the odd passer-by and stealing his treasure!

To some, the game is more a way of life than light relief – it's easy to get hooked, and soon you could find yourself going to Shades "meets", finding out what everyone else looks like in person!

Digging the dirt

Trash is a similar game to Shades – you work your way up from slave to lord by collecting rubbish that is littered around the multiverse. The whole scenario is much more comical than Shades, not taking itself nearly so seriously.

Both games are good ways to meet new 'netters and have fun at the same time. If you're a fan of adventures, Shades and Trash will open up a whole new world to you. Even so, they are charged at 2p per minute, and sometimes you won't want to log off.

Be warned, Shades and Trash can seriously damage your wealth!

Next month
More Micronet monthly and how to become a sysop.

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"Is it real or is it Master Sound?"
– Amiga Computing, May 1990



Passing an exam . . . applying for a job . . . whatever you want to do in life you need to be able to SPELL!

There's mounting alarm about the appalling standards of spelling among Britain's schoolchildren. MPs, teachers, parents and employers are all stressing the vital importance of being able to spell correctly.

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Instead of zapping aliens it could be turned into the best weapon of all to deal a body blow to bad spelling. With the help of a brilliant new software package that not only makes practising spelling painless but also loads of fun as well.

SPELL! is unique. It lets the user learn at his or her own pace. They can take as long as they like – or take on the computer in a high-speed challenge!

And this one package is ideal for everyone – with the lowest age group suitable for under-5s, while the more advanced words will stretch even the most able students.

It includes five different tests, each making use of more than 5,000 words – so much variety that you'll never get bored.



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In a Flash: *Read the word as it flashes on the screen, then type it in. For practice runs, the word is left on the screen as it is typed.*

Rocket: *Hidden words have to be discovered in this hi-tech version of the old favourite Hangman. If they are guessed correctly the rocket will blast-off. Fail and all that's left is a load of scrap.*

Lunar Buggy: *Type fast for fun. The aim is to key in the word as it's pulled across the screen by the buggy. It has to be completed before the letters drop down a crater.*

All Mixed Up: *Jumbled letters have to be sorted out to find the scrambled word. To help beginners – and anyone else who is stuck – clues can be obtained at the press of a key.*

Conveyor Belt: *Words pass by on the screen and have to be remembered. Then they must be typed in – spelt correctly. This is a challenging test of both spelling and memory.*

All the programs have several options for extra flexibility – like a timer with on/off option to

In addition to using the 5,000 words provided, parents – or children – can create their own word lists for using with SPELL! This makes the package ideal for practising those hard-to-learn words, or for "Learn these spellings" homework.